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BLUE JAY

December 1990

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EDITORIAL

A good friend spoke longingly to me not so long ago of the "good old days" when a naturalist could spend time communing with nature. Being a naturalist meant spending time in the great outdoors observing nature and recording what was seen. My friend expressed uneasiness with all the new ecologists and environmentalists who are now demanding action from governments and from individuals. But, I argued, without these people to fight for us, where would t
naturalist (in the old sense of the wo
be? Unfortunately, we need these peop
to help us preserve that natural world th
is so precious. The state of the world,
people are shouting everywhere, is cri
cal. We need to join our voices, and o
forces, and work cooperatively towar
our common goal.

(*continued on page* 248)

g north from the top of the Porcupine Hills, June 1977 Wayne C. Harris

BROCKELBANK HILL—FLORISTICALL UNIQUE IN SASKATCHEWAN, AND DESERVING PROTECTION

VERNON L. HARMS, The Fraser Herbarium and Biology Department, Universit
Saskatchewan, Saskatoon, Saskatchewan. S7N 0W0

Floristically one of the most unique areas in the province, possessing an unusually high concentration of provincially rare and sometimes widely disjunct native plant species, is the 3800-hectare summit of Brockelbank Hill, the highest part of the Porcupine Hills in east-central Saskatchewan (about 45-50 km east-southeast of the town of Hudson Bay, see Map 1). With the inclusion of an 8-km linear stretch of the Little Armit River Valley to the north a total of 29 species of native vascular plants recognized as rare in Saskatchewan are found in this area (see map 2). Nine of these taxa are considered especially rare for the province [viz. *Carex laxiflora* var. *varians, Cystopteris montana, Lycopodium selago* var. *patens, Malaxis monophyllos* var. *brachypoda, Milium effusum* var. *cisatlanticum, Potamogeton robbinsii, Viola incognita, Viola macloskeyi* ssp. *pallens*, and *Viola pubescens* var. *leiocarpa*].

Fourteen of the 29 provincially rare plants now known from the Brockelbank Hill - Little Armit River area were first discovered there and collected in 1973 and 1974 by John H. Hudson, who subsequently published reports on eight of them, including four as new provincial records.[6] [7] The remainder were subsequently found and collected in the area by George F. Ledingham, Wayne C. Harris, Donald F. Hooper, Les Baker and the present author, with Hudson and Hooper making the most significant contributions to our botanical knowledge of the area.

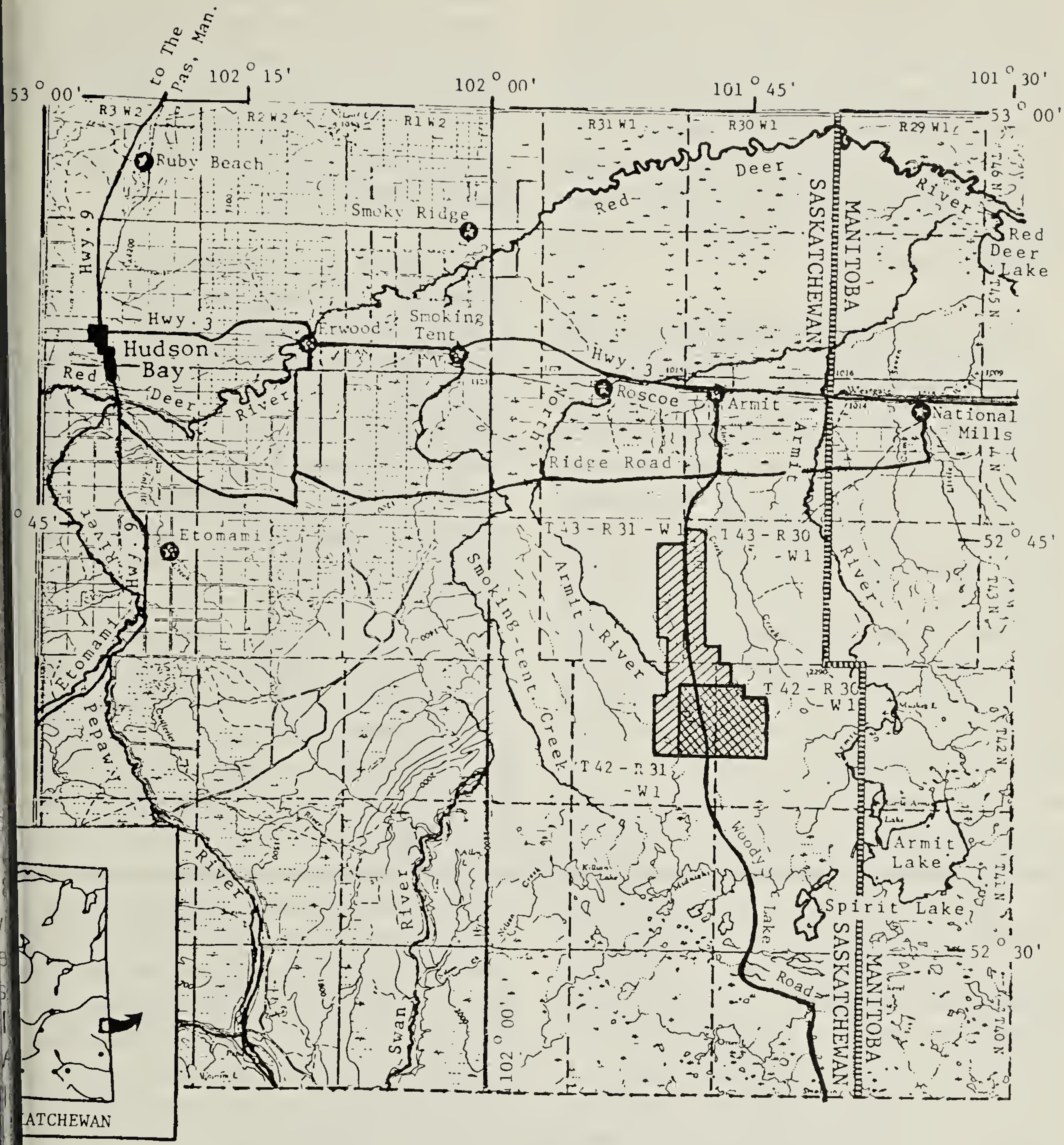
The provincially rare plants that have been recorded from within the confines of the proposed Brockelbank Hill - Li
Armit River Natural Area are presente
an appended annotated list, alphabeti
ly by scientific name, followed by im
tant synonyms, the common name(s),
local habitats of the plants, literat
reports and specimen record citati
from the study area and a list of other s
within Saskatchewan. Maps show
recorded sites within the study area of
provincially rare taxa. Saskatchewan
tribution is also shown on the inset m

Vegetation and forests

Prior to the 1980 fire the Brockelb
Hill summit and slopes were prima
covered by forests of White and Bl
Spruce (*Picea glauca* and *P. mariana*) w
varying admixtures of White Birch (*Be
papyrifera* and *B. neoalaskana*), a
especially along drainages, Bal
Poplar (*Populus balsamifera*), River Al
(*Alnus rugosa*) and willows (*Salix* sp
Some of the drier ridges supported J
Pine (*Pinus banksiana*) stands. Sm
lakes or ponds are often margined
boggy shore fens; bogs are surrounded
wet Black Spruce woods.

At the lower elevations (about 425-
m/1400-1700 ft.) along the Little Ar
River are found rich, mesic, predomin
ly mixedwood stands of White Spru
White Birch - Balsam Poplar - Tremb
Aspen (*Populus tremuloides*), often w
a lush understory of Mountain Ma
(*Acer spicatum*).

About two-thirds of the forests on
Brockelbank Hill summit and north
brow were burned off during the m



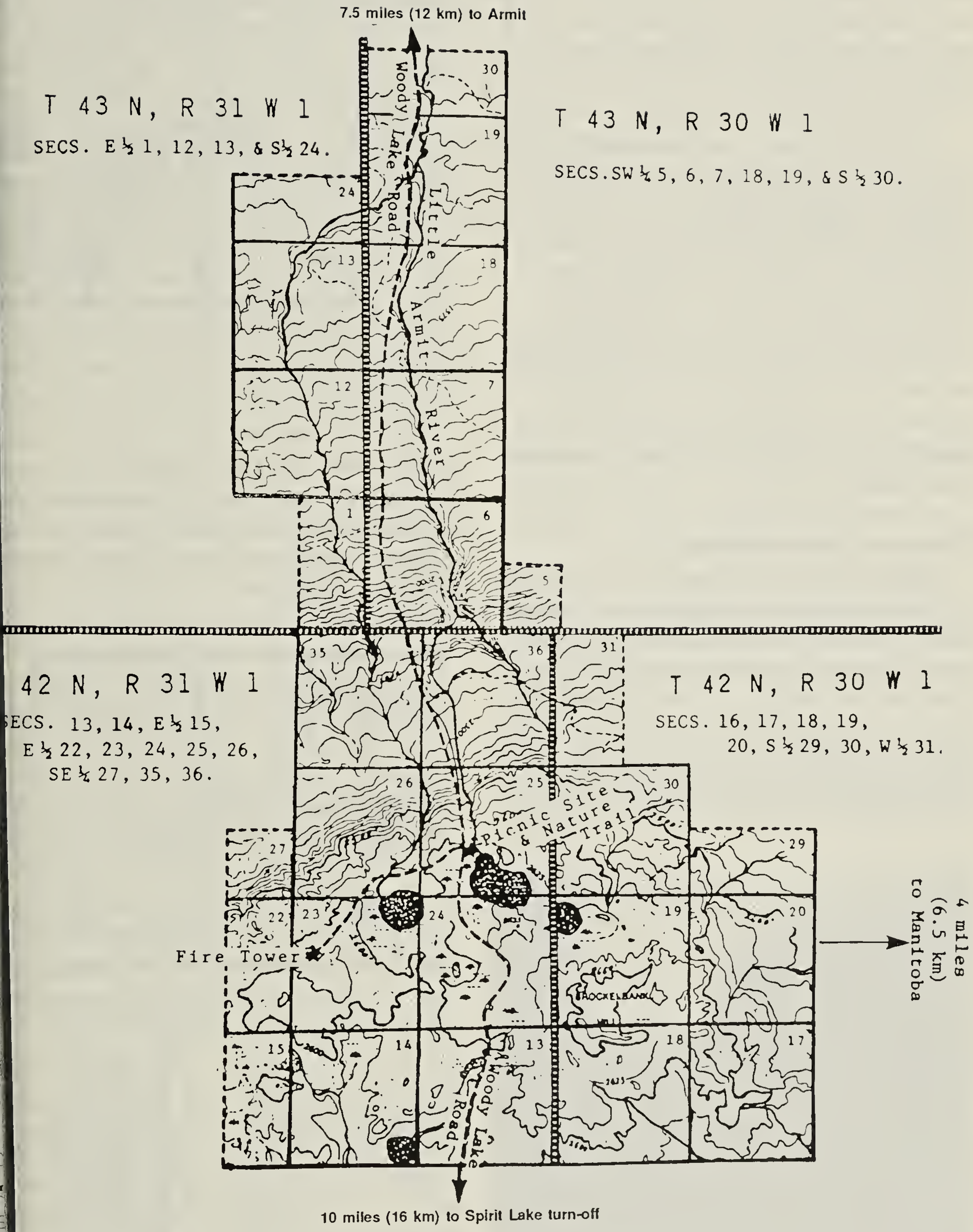
1. *East-central Saskatchewan showing the Brockelbank Hill and Little Armit ver area as proposed for an ecological reserve.*

) forest fire leaving intact mainly the
ands and some Black and White
e stands. Now, there is serious con-
that the forest industry apparently
lans to clear-cut the remaining, still
ing timber on Brockelbank Hill and
s northern slopes, as well as along
ittle Armit River. Furthermore, it is
d that what has historically been an
y industry-oriented Forestry Branch
Saskatchewan Department of Parks
Renewable Resources may all too
acquiesce to such plans despite the desire of knowledgeable conservationists, botanists and naturalists to save this unique area. Such potential clear-cutting of the forests would have predictably devastating results, destroying most, if not all of the rare, delicate understory plants present in this botanically rich and unique area. The fire-surviving forests on similar high-elevation hills in the Manitoba Porcupine Hills to the east apparently have already been clear-cut, with the loss of many delicate forest understory species of ferns, orchids,

violets, and other wild flowers upon the removal of the cool, mossy, high-altitude woods. Hopefully such a serious mistake from a conservation perspective may still be prevented in Saskatchewan's Porcupine Hills, so that an important and irreplaceable part of our natural botanical heritage may still be preserved in its wilderness state.

Present day forest harvesting, as carried out both for the lumber and pulping industries, is an anathema to naturalists and conservationists. The current clear-cutting and associated forestry methods that involve the removal of all harvestable species and a bulldozing of the underbrush, leaves the cut forest totally disturbed. The understory plants are largely destroyed, especially those characteristic of the cool, moist woods which are unable to survive on the now warmed, exposed surfaces. The rarest and most delicate understory species are irretrievably lost from extensive clear-cut areas. With the use of modern clear-cutting methods, followed often by scarification and sometimes a subsequent "weeding" of successional understory plants, natural forests can not be considered truly renewable, nor the forestry industry to be environmentally sustainable. Systematic botanists, ecologists and naturalists view forests in terms of the total spectrum of native species present. It is not tolerable that our province's forests should be considered as merely a resource to be "mined" and destroyed for immediate profits and jobs, nor that they be managed as if they were only "tree-farms" to produce "crops" of a few desired tree species. Rather, they are the natural home for hundreds of plant and animal species, and as such represent important and irreplaceable surviving fragments of our natural heritage. At the very least, those limited areas of our natural forests that reveal a special uniqueness in terms of the presence of rare species and unusual botanical diversity, should be saved from destruction in perpetuity. To do otherwise would seem
unforgivable display of human arrogar
and greed. Few areas in Saskatchew
would appear more deserving of pres
vation for the foregoing reasons than t
proposed Brockelbank Hill - Little Arr
River Natural Area.

Access to this proposed natural are
provided by the Woody Lake Ro
which extends south from the former
lage of Armit (on Provincial Highway #
ascending the northern slopes of the P
cupine Hills along the Little Armit Riv
and then descending the southern slop
of the hills roughly parallel to the Woo
River, and continuing southward to t
village of Arran (on P.H. #49). Along t
Woody Lake Road, about 22 km (1
mi.) south of Armit, just over the no
brow of the Brockelbank Hill summit,
approximately 790 m (2600 ft.) elevati
a 2.5-km side road branches to the we
leading past "Rice Lake" to the Fire Tow
Lookout. On the east side of the Woo
Lake Road, at this junction and beside t
streamlet that is the upper Little Ar
River, a small provincial roadside pic
site was established in the late 1970s
plaque-bearing cairn was erected at t
site to commemorate and name the
summit in honor of John Brockelbank
long-time popular member of the prov
cial legislative assembly who represent
the Hudson Bay District. In 1979-80 t
Saskatchewan Department of Touri
and Renewable Resources (STRR) laid
the "Brockelbank Hill Nature Trai
beginning at the picnic site, proceedi
east through the rich spruce woods, a
terminating at the marshy lake shore.
though the self-interpretive brochu
prepared for this trail by STRR (19
failed to mention any, there are 12 prov
cially rare plant species found either
the streamlet banks in the campsite ar
or in the woods along the trail, or else
the marshy shore and shallow lake wa
at the trail terminus. These include
especially rare Mountain Bladder-fe
Large-leaved White Violet, Millet Gra



p 2. *The proposed Brockelbank Hill Natural Area (Porcupine Hills)*

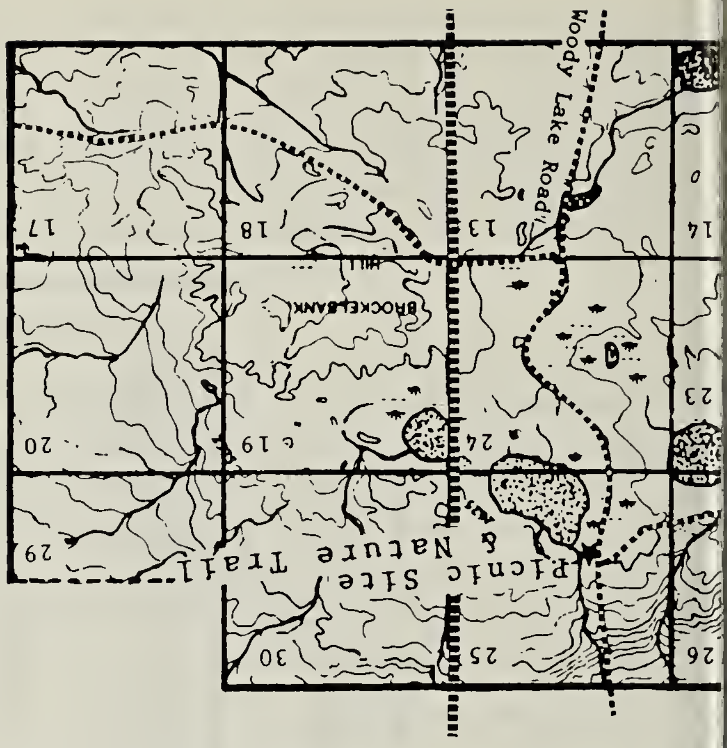
Loose-flowered Sedge, White Adder's-mouth Orchid, and Robbin's Pondweed. Not only Ostrich Ferns, as mentioned in the brochure, are prominent along moist streamlet banks at the picnic site, but almost equally abundant here are the provincially rare Lady Ferns.

About 1 km west-southwest of the picnic site, along the Fire Tower Road, the broad marshy fen-like border of the small lake, locally called "Rice Lake" because of the aquaculturing here of Wild Rice (*Zizania aquatica*), is a second site notable for the presence of six provincially rare species. These include the especially rare Sweet White Violet and the Patent Mountain Club Moss.

Proposed Natural Area

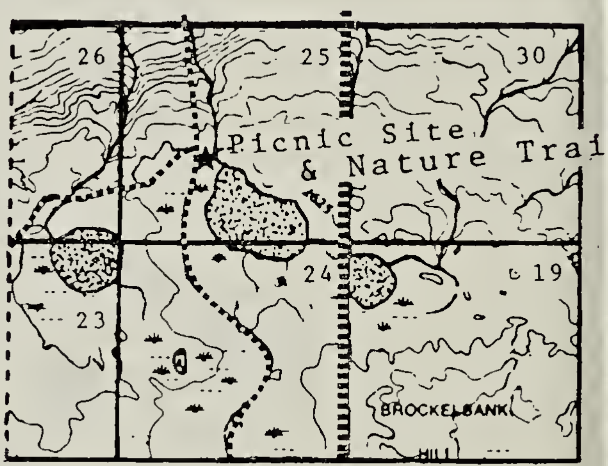
The author proposed to the Saskatchewan Department of the Environment that the Brockelbank Hill - Little Armit River be legally established as a protected ecological reserve, first in 1985, and again in 1986 and 1988. Hooper has also variously petitioned the Saskatchewan government to legally protect this area.

The maximum area recommended for protection within the reserve is shown in Map 2 and includes a total of 60 km^2 (23 mi.^{2}), including the following sections, or parts thereof: sections 16,17,18,19, s half 29, 30, w half 31 in Township 42-Range 30-west of the 1st meridian; 13, 14, e half 15, e half 22, 23, 24, 25, 26, se quarter 27, 35 -T42-R31-W1; sw quarter 5, 6, 7, 18, 19, s half 30-T43-R30-W1; e half 1, 12, 13, s half 24 -T43-R31-W1. A more limited version of the natural area would encompass 26 km^2 (10 mi.^{2}), designated by sections 17, 18, 19, 20, s half 29 and 30-T42-R30-W1, and sections 13, e half 14, e half 23, 24, 25, e half 26-T42-R31-W1 (see Map 3).



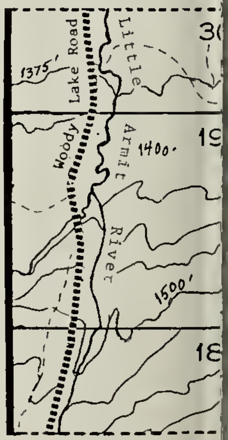
Map 3. *Limited Brockelbank Hill Natural A*

The minimum area which nee protection as a Brockelbank Hill Natu Area, as shown in Map 4, includes 13 k (5 mi.^{2}) within sections 19 and 30-T4 R30-W1, and the e half 23, 24, e half 2 and 25-T42-R31-W1.



Map 4. *Minimum Brockelbank Hill N.*

The minimum area for a Little Armit River Natural Area (Map 5) includes 5.2 km^2 (2 mi.^{2}) legally described as n half 18, 19 and s half 30-T43-R30-W1.



Map 5. *Minimum Little Armit R. N.A.*

onclusion

The previous proposals to the Sask-
tchewan government for the legal
otection of the Brockelbank Hill - Little
mit River area as an ecological reserve,
ovincial park, or protected forest
eserve have received little apparent
sponse to date from either the Depart-
ent of Environment or the Department
Parks and Renewable Resources.
opefully, the preservation of the natural
bitats of provincially rare native plants
d of unique areas of exceptional
tanical diversity, that represent ir-
placeable portions of our natural
ritage, may yet receive more con-
leration and a higher prioity from Sas-
tchewan government departments
n has been apparent in the recent past.

esides documenting plant rarities, an
portant objective of this article has
n to better inform Saskatchewan
uralists and conservationists concern-
the existence of rare plants and the
istic uniqueness of the Brockelbank
l - Little Armit River area, thus hope-
y soliciting public support for efforts
egally protect this valuable fragment
ur natural heritage.

RGUS, G.W. 1968. Contributions to
e flora of boreal Saskatchewan.
hodora 70: 200-214.

ARMS, V.L. 1978. A Tentative
hecklist of the Rare and Potentially En-
ngered Native Vascular Plants of Sas-
tchewan, Canada. TR No. 78-1, The
.P. Fraser Herbarium, University of Sas-
tchewan. 32 pp.

ARMS, V.L., D.F. HOOPER, and L.
KER. 1985. Four violets new to the
ovincial flora and other rare violets of
st-central Saskatchewan. *The Canadian*
ld-Naturalist 99(4):498-502.

OOPER, D.F. 1984. The twining
ckwheats of east-central Sask-
hewan. *Blue Jay* 42(2):71-72.

OOPER, D.F. 1988. Field Checklist
Rare Saskatchewan Plants of the Hudson Bay Area. Saskatchewan Natural History Society, Regina, Sk.

[6] HUDSON, J.H. 1974. Plant records for Saskatchewan - 1973 Version - starring Porcupine Mountain. *Blue Jay* 32 (4):210-214.

[7] HUDSON, J.H. 1976. 1974 plant records from Saskatchewan; rediscoveries, discoveries and curiosities. *Blue Jay* 34(1): 9-15.

[8] HUDSON, J.H. 1977a. Rare and endangered native plant species in Saskatchewan. South of latitude 55°. *Blue Jay* 35(3):126-137.

[9] HUDSON, J.H. 1977b. *Carex* of Saskatchewan. Bison Publishing House, Saskatoon, Sk.

[10] MAHER, R.V., G.W. ARGUS, V.L. HARMS and J.H. HUDSON. 1979. The Rare Vascular Plants of Saskatchewan. *Syllogeus* No. 20, National Museums of Canada, Ottawa, Ontario.

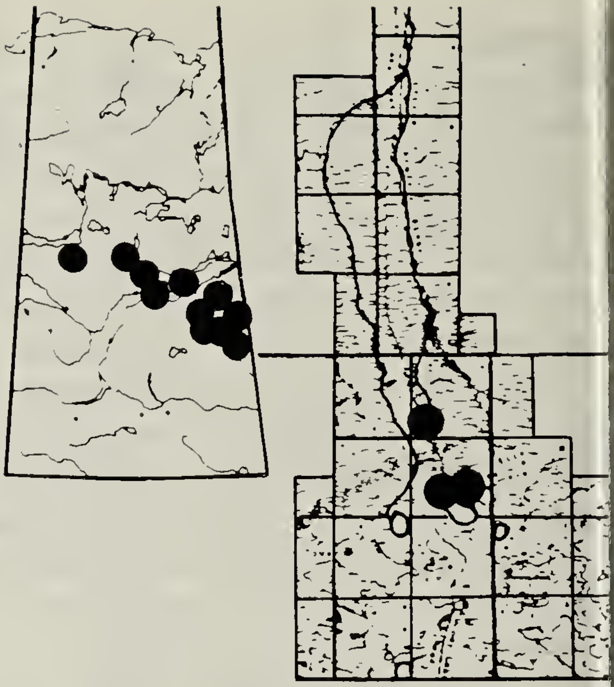
[11] SKOGLUND, N.A. and V.L. HARMS. 1976. An Identification Guide to the Grasses of Saskatchewan. TR No 76-1, The W.P. Fraser Herbarium, University of Saskatchewan.

[12] WHITE, D.J. and K.L. JOHNSON. 1980. The rare vascular plants of Manitoba. *Syllogeus* No. 27, Nat. Mus. of Canada, Ottawa.

Forest with rare violets in understory
Wayne C. Harris

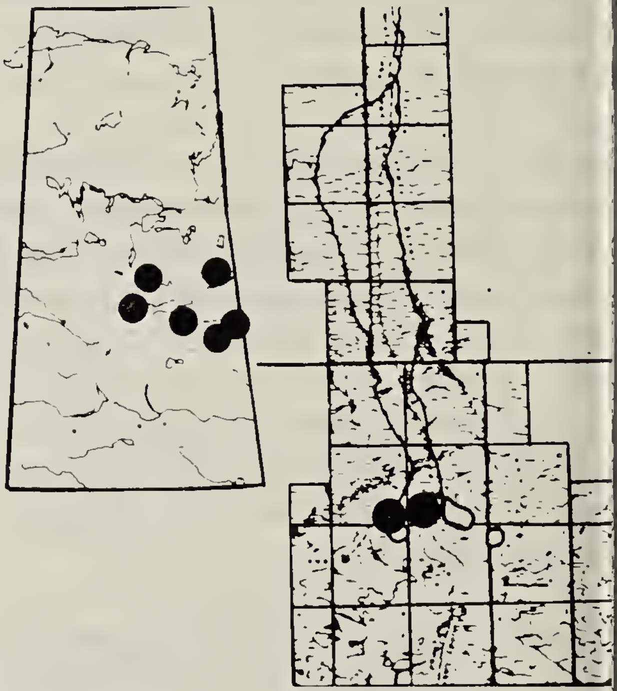
Annotated List of the Provincially Rare Plants of the Brockelbank Hill - Little Armit River Area

1. *Adoxa moschatellina* L. — MOSCHATEL. (Adoxaceae). In wet woods. Elsewhere in Saskatchewan, occasionally across the central part of the province, becoming somewhat more frequent eastward. Reported by Hooper.[5] Specimen records: V.L. Harms, D.F. Hooper & L. Baker 32490, 32505, 32626. Brockelbank Hill & Little Armit River. (Map 6).



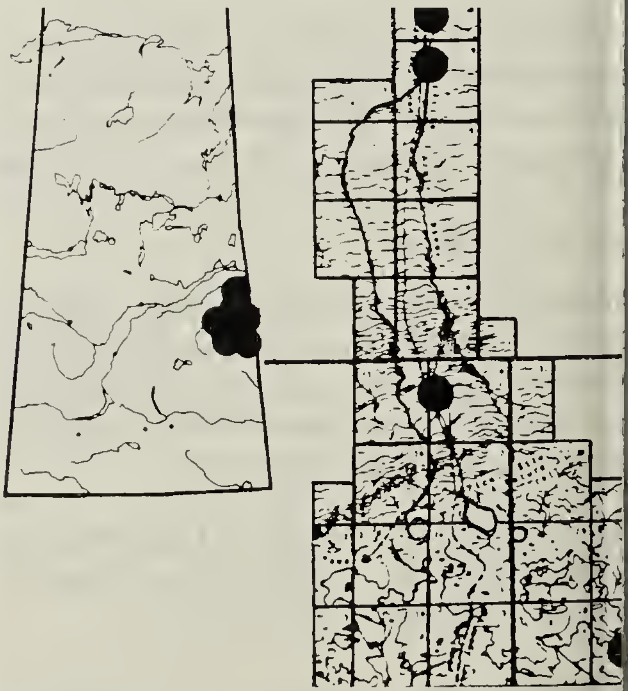
Map 6. *Adoxa moschatellina*

2. *Andromeda glaucophylla* Link [*A. polifolia* L. ssp. *glaucophylla* (Link) Hulten] — GLAUCOUS-LEAVED BOG ROSEMARY. (Ericaceae). In wet bogs. At various other sites in the east-central part of the province, west to near Prince Albert. Reported by Hooper.[5] Specimen records: V.L. Harms, D.F. Hooper & L. Baker 34946, 35059, 35145 (SASK). Brockelbank Hill. (Map 7).



Map 7. *Andromeda glaucophylla*

3. *Anemone quinquefolia* L. var. *interior* Fern. [*A. nemorosa* L. var. *bifolia* (Farw.) Boivin] — WOOD ANEMONE. (Ranunculaceae). Moist mixed woods. Only in east-central Saskatchewan. Reported by Hudson,[7,8] Harms,[2] Maher et al.,[10] and Hooper.[5] Specimen records: J.H. Hudson 2930 (SASK); V.L. Harms & L. Baker 32478 (SASK); V.L. Harms, D.F. Hooper & L. Baker 32524 (SASK). Brockelbank Hill & Little Armit River. (Map 8).



Map 8. *Anemone quinquefolia interio*

4. *Athyrium filix-femina* (L.) Roth — LADY FERN. (Aspleniaceae). Moist streamlet edges under mixed and birch woods. Elsewhere in Saskatchewan from half a dozen, widely spaced localities, including the Cypress Hills, Clearwater River, Lake Athabasca south shore, south of Wollaston Lake, Wapawekka Lake and the Pasquia Hills. Reported here by Hooper.[5] Specimen records: W.C. Harris, 553, 554, or 560 (SASK); V.L. Harms, D.F. Hooper & L. Baker 32145, 32168, 32489, 32533, 34847,

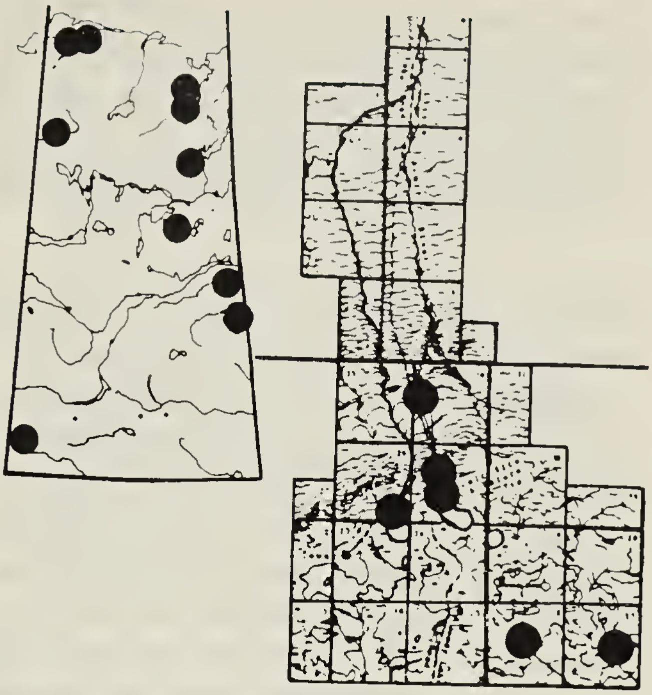
thyrium filix-femina — LADY FERN
Wayne C. Harris

34927, 35026, 35057 (SASK). Brockelbank Hill & Little Armit River. (Map 9).

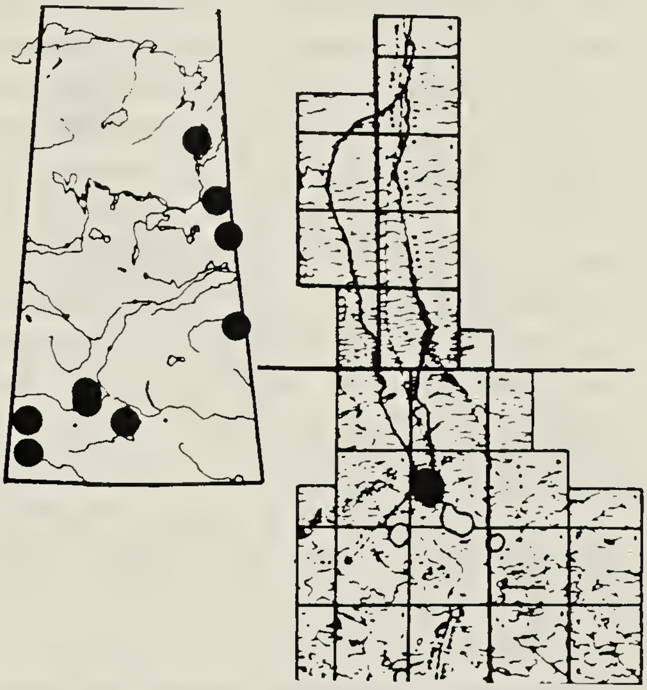
Botrychium matricariaefolium A.Br. — CHAMOMILE-LEAVED GRAPE-FERN. Ophioglossaceae). Moist-open spruce voods. Locally rare at widely spaced ocalities from the Cypress Hills to near Reindeer Lake. Reported by Hooper.[5] Specimen records: V.L. Harms, D.F. Hooper & L. Baker 35123 (SASK). Brockelbank Hill. (Map 10).

otrychium multifidum (Gmel.) Rupr. — LEATHERY GRAPE FERN. Ophioglossaceae). Moist, open-vooded shores. Locally rare at various idely spaced sites over the province. eported by Hooper.[5] Specimen ecords: D.F. Hooper & L. Baker 8707-103 (SASK). Brockelbank Hill. (Map 1).

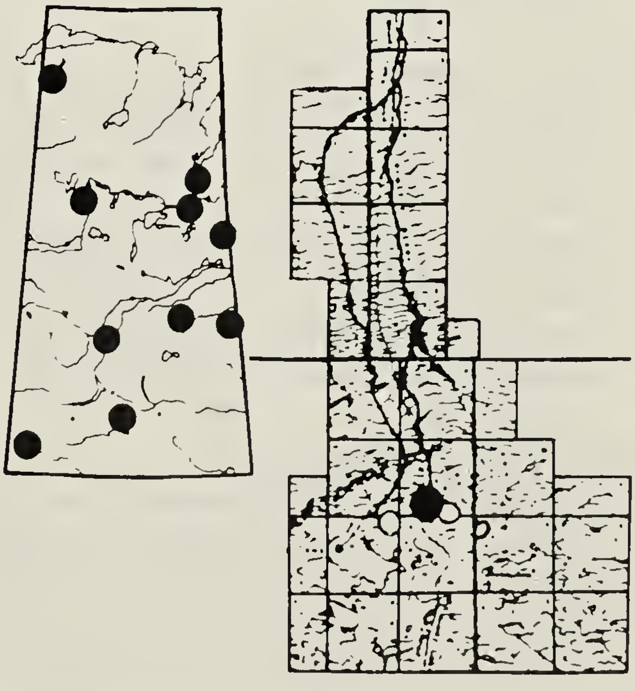
arex laxiflora Lam. var. *varians* ailey [*C. leptonervia* Fern.] — OOSE-FLOWERED SEDGE. Cyperaceae). In mossy spruce woods. ne only Saskatchewan record at the ecies' western range limit. Reported



Map 9. *Athyrium filix-femina*



Map 10. *Botrychium matricariaefolium*



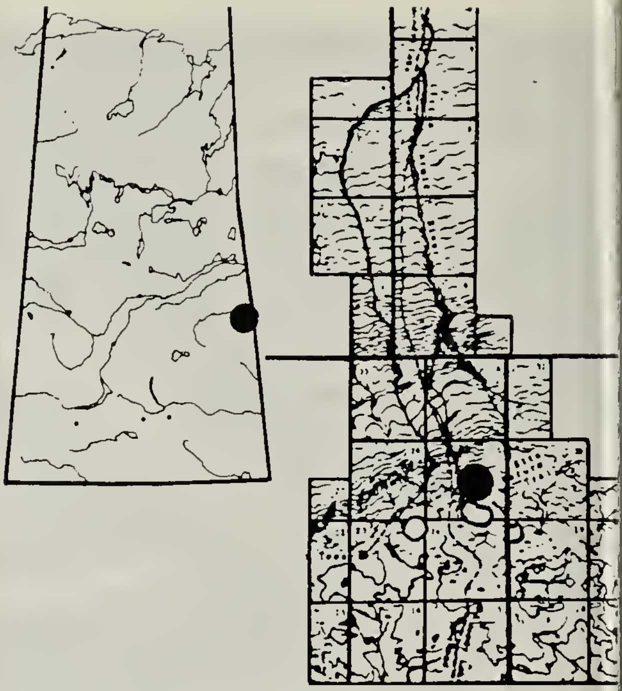
Map 11. *Botrychium multifidum*

by Hudson,[6, 8, 9] Harms,[2] Maher et al.[10] and Hooper.[5] Specimen records: J.H. Hudson 2871, reported as var. *blanda* (Dewey) Boott [*C. blanda* Dewey] (SASK, DAO).[6] Brockelbank Hill. (Map 12).

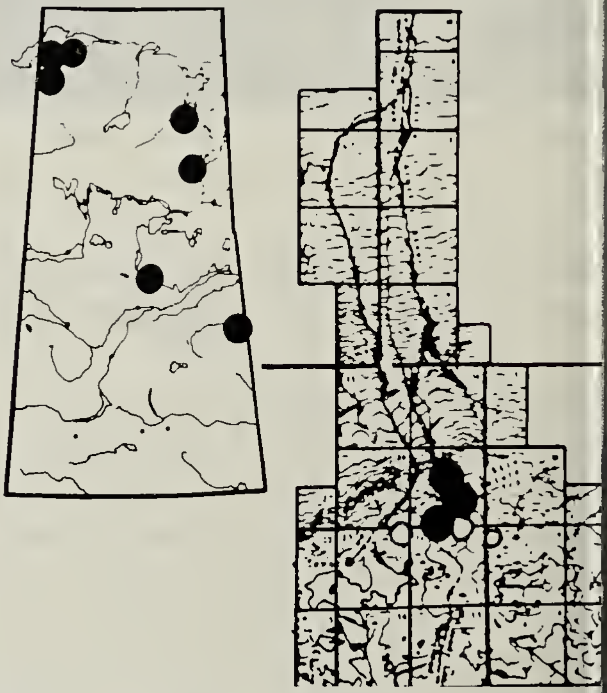
8. *Carex pauciflora* Lightf. — FEW-FLOWERED SEDGE. (Cyperaceae). On sphagnum moss in wet black spruce woods. Recorded from Lake Athabasca, Cluff Lake, Southend region, Courtney Lake (south of Wollaston Lake) and Candle Lake. This sedge was not included by Maher et al. as a provincially rare species because the plants are apparently quite numerous in some northern Saskatchewan populations.[10] Nevertheless the known locality records in the province are relatively few and this species would seem at least a potential candidate for provincially rare status. Hudson reported it to be "a species of the Boreal Coniferous Forest, which is either rare or hard to see."[9] Whether or not this species deserves a provincially rare status, the Brockelbank Hill population represents a phytogeographically interesting southern outlier in Saskatchewan. Specimen records: J.H. Hudson 2856 (SASK, DAO); D.F. Hooper 8307-1603 (SASK); V.L. Harms, D.F. Hooper & L. Baker 84922 (SASK). Brockelbank Hill. (Map 13).

9. *Carex pedunculata* Muhl. — LONG-STALKED SEDGE. (Cyperaceae). Moist rich deciduous and mixed woods. Only from near Hudson Bay and Cumberland House. Reported by Hudson,[7, 8, 9] Harms;[2] Maher et al.[10] & Hooper.[5] Specimen record: J.H. Hudson 2932 (SASK). Little Armit River. (Map 14).

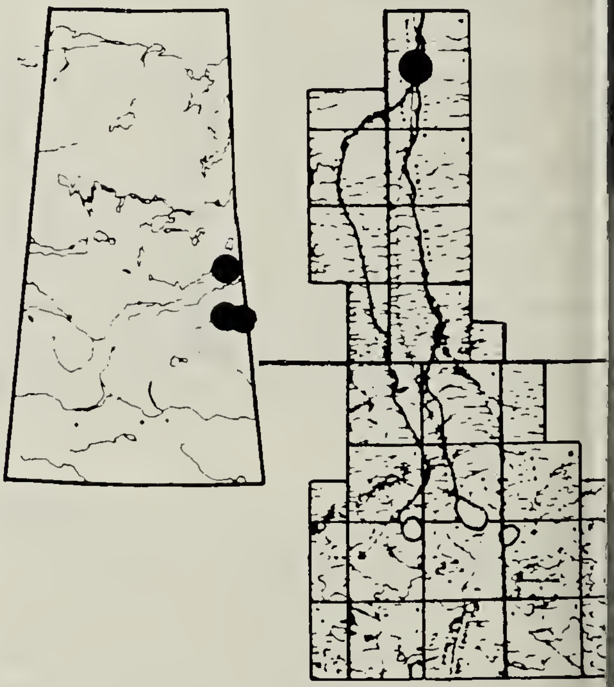
10. *Carex trisperma* Dewey — THREE-SEEDED SEDGE. (Cyperaceae). In wet woods. At several, widely spaced, boreal forest localities across the province. Reported by Hooper.[5] Specimen records: D.F. Hooper, L.



Map 12. *Carex laxiflora varians*



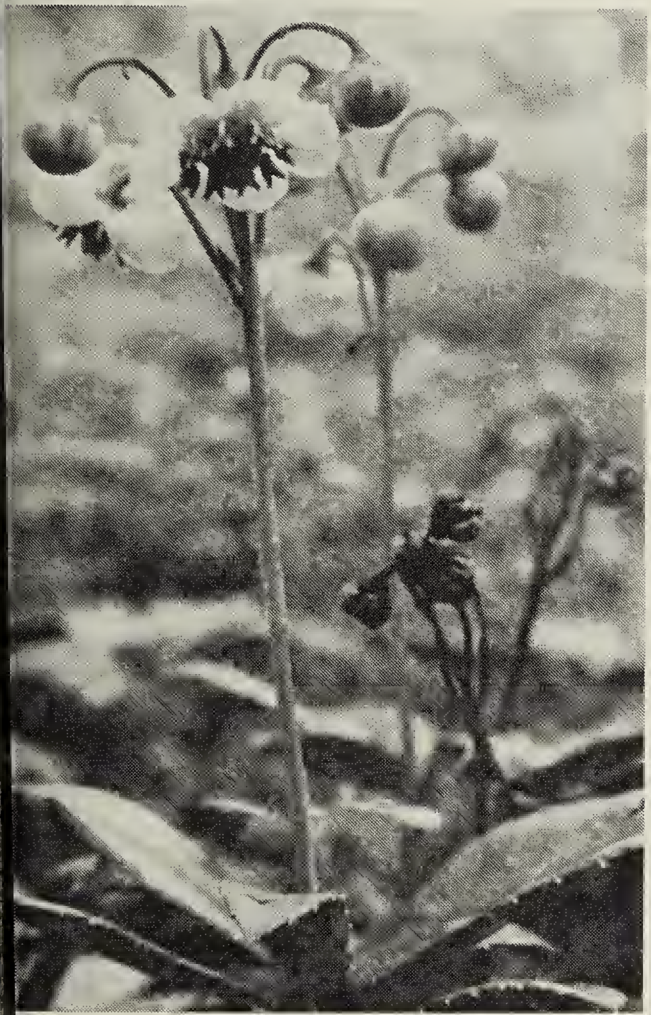
Map 13. *Carex pauciflora*



Map 14. *Carex pedunculata*

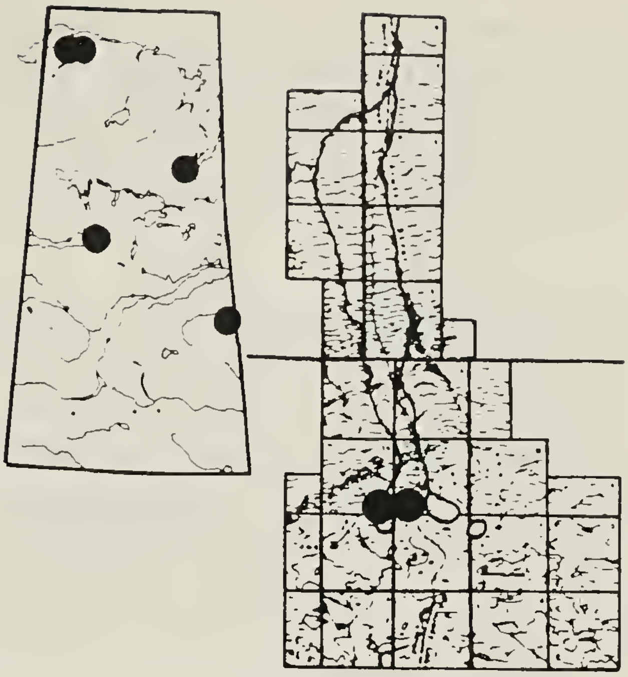
Baker & V.L. Harms 8508-0108 & 8508-0118 (SASK). Brockelbank Hill. (Map 15).

1.*Chimaphila umbellata* (L.) Bart. — PRINCE'S-PINE; PIPSISSEWA. (Pyrolaceae). In open coniferous or mixed woods. At various widely spaced boreal forest and Cypress Hills localities. Reported by Maher et al.[10] and Hooper.[5] Specimen records: Those documenting the Maher et al. report have not yet been located. Brockelbank Hill. (Map 16).

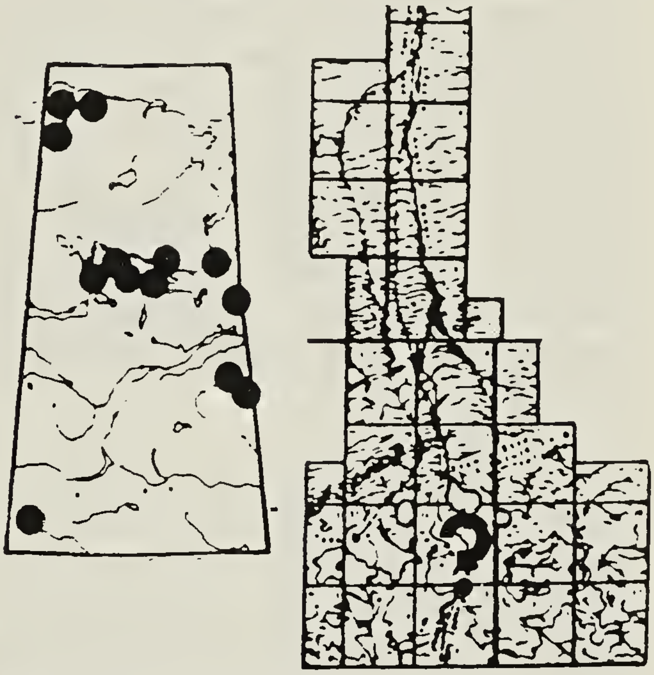


imaphila umbellata — PIPSISSEWA
Wayne C. Harris

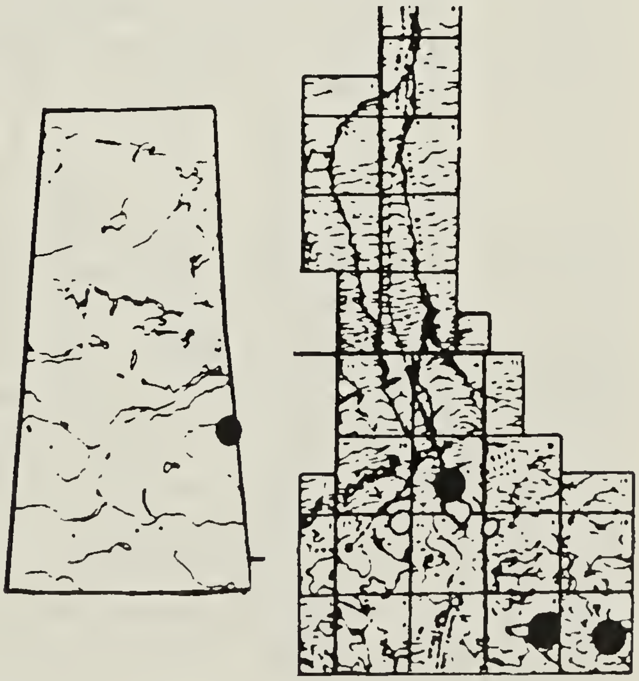
Cystopteris montana (Lam.) Bernh. — OUNTAIN BLADDER FERN. spleniaceae). Moist spruce woods nd open seepy north-facing slopes. he single known Saskatchewan cality, and only record of this species etween Waterton Lakes National ark, Alberta, and Lake Superior. eported by Hudson,[6, 8] Harms,[2] Maher



Map 15. *Carex trisperma*



Map 16. *Chimaphila umbellata*



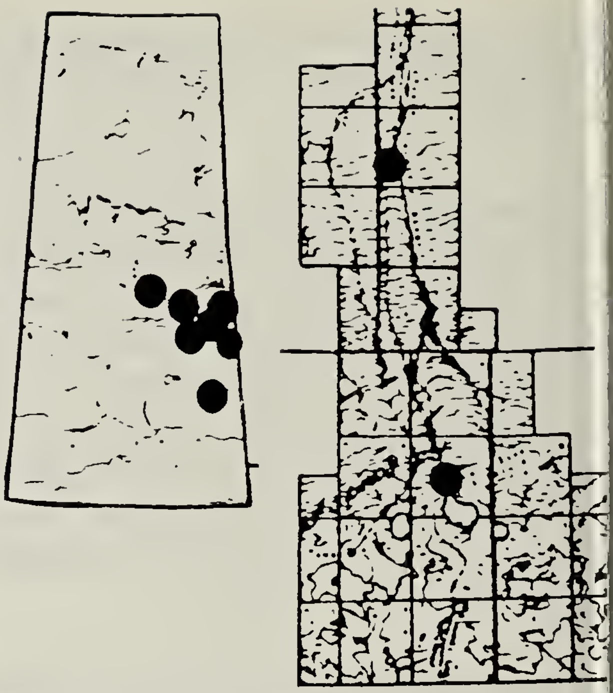
Map 17. *Cystopteris montana*

et al.[10] and Hooper.[5] Specimen records: J.H. Hudson 2866 (SASK, DAO); V.L. Harms, D.F. Hooper & L. Baker 32150, 32163, 32172, 32179, 34930, 35035, 35075 (SASK). Brockelbank Hill. (Map 17).

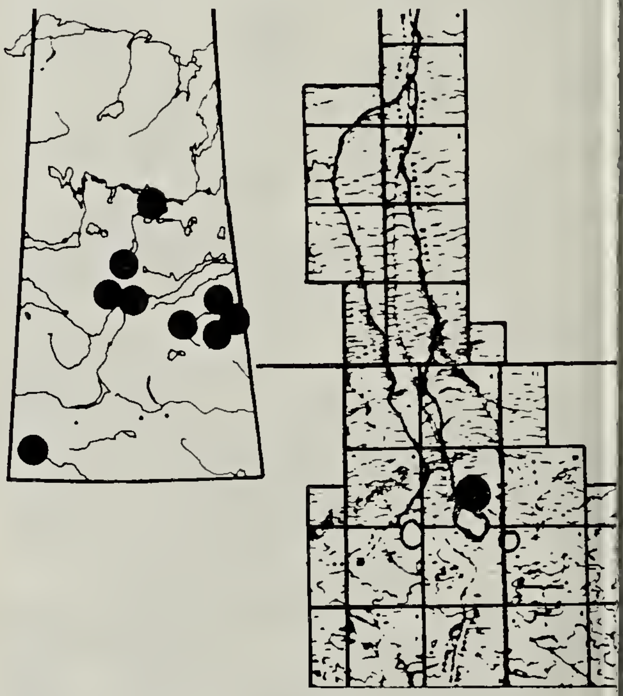
13. *Diervilla lonicera* P.Mill. — BUSH HONEYSUCKLE. (Caprifoliaceae). In moist White Spruce and mixed woods. It is now known from quite a number of localities in east-central Saskatchewan from the Pasquia Hills, the Red Deer and Piwei River valleys, and west to Greenwater Lake Provincial Park, extending northwestward to Nipawin and Torch Lake south of Candle Lake. On the basis of the fairly numerous recent collections with notations of relative abundance in east-central Saskatchewan, this species may no longer deserve the provincially rare status assigned to it by Maher et al.[10] Specimen records: J.H. Hudson 2868 (SASK); R. Berezowsky s.n. (22 July 1975) (SASK). Brockelbank Hill and Little Armit River. (Map 18)

14. *Listera borealis* Morong — NORTHERN TWAYBLADE. (Orchidaceae). Springy spruce woods and alder thickets. Sparse in the Cypress Hills and the southern boreal forest region from Duck Mountain and near Prince Albert north to Lac la Ronge. Reported by Hooper.[5] Specimen records: D.F. Hooper s.n. Brockelbank Hill. (Map 19).

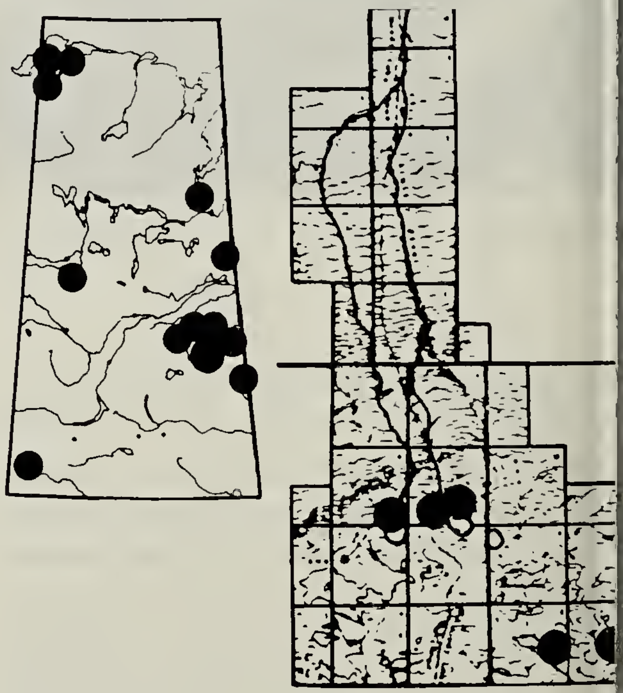
15. *Listera cordata* (L.) R.Br. — HEART-LEAVED TWAYBLADE. (Orchidaceae). In moist spruce woods and treed bogs. Sparse at various widely spaced localities in the Cypress Hills and the boreal forest northwards from Duck Mountain and Meadow Lake. Reported by Harms[2] and Hooper.[5] Specimen records: J.H. Hudson 2854 (SASK); V.L. Harms, D.F. Hooper & L. Baker 34823, 34898, 35043, 35081 (SASK). Brockelbank Hill. (Map 20).



Map 18. *Diervilla lonicera*

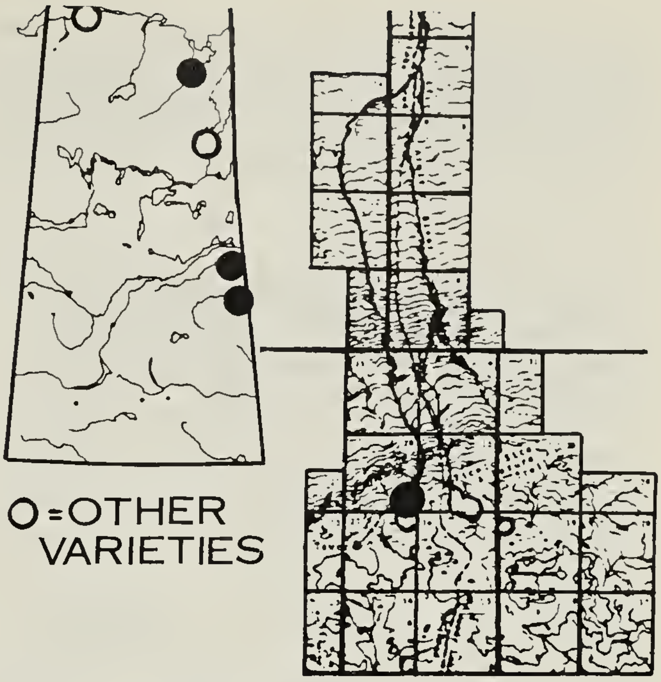


Map 19. *Listera borealis*



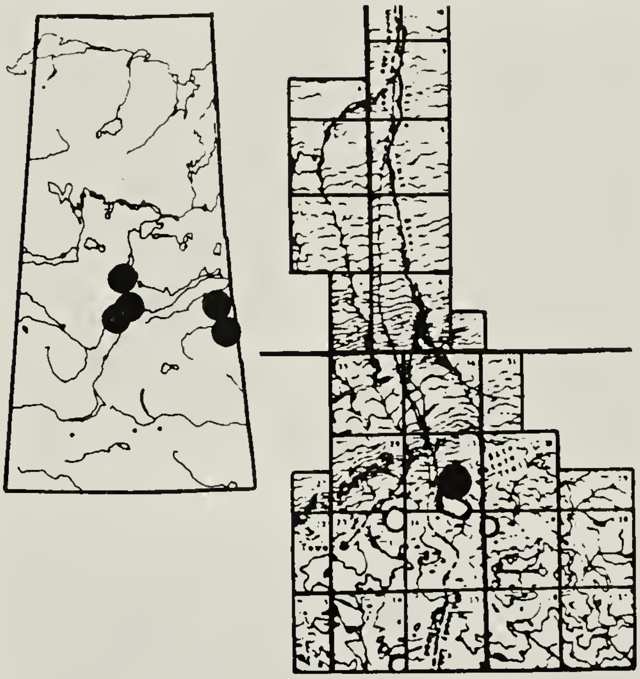
Map 20. *Listera cordata*

16.*Lycopodium selago* L. var. *patens* (Beauv.) Desv. — MOUNTAIN CLUB-MOSS. (Lycopodiaceae). Moist seepy spruce woods. This variety is recorded from single sites at western Wollaston Lake and at Bainbridge Canyon, northeastern Pasquia Hills. The variety *appressum* is recorded in Saskatchewan from Lake Athabasca, the northeastern corner of the province, Southend and near Cree Lake, and the variety *selago* only from Southend and the northeastern corner. Specimen record: D.F. Hooper & L. Baker 8906-0710 (SASK). Brockelbank Hill. (Map 21).



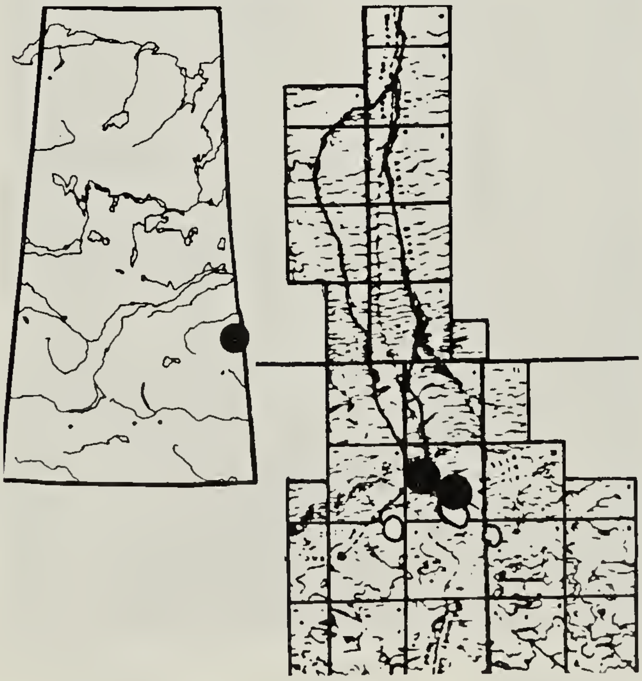
Map 21. *Lycopodium selago patens*

7.*Malaxis monophyllos* (L.) Sw. var. *brachypoda* (Gray) Morris & Eames — SHEATHED ADDER'S-MOUTH ORCHID. (Orchidaceae). Wet spruce woods. Locally sparse at a few sites near Prince Albert, Lake Waskesiu, and in the Pasquia Hills. Reported by Hooper.[5] Specimen record: V.L. Harms, D.F. Hooper & L. Baker 34890 (SASK). Brockelbank Hill. (Map 22).



Map 22. *Malaxis monophyllos*

.*Milium effusum* L. var. *cisatlanticum* Fern. — MILLET GRASS. (Poaceae). Open mixed woods. The only known Saskatchewan locality, at the western range limit of this eastern species. Reported by Hudson,[6] [8] Skoglund & Harms,[11] Maher et al.[10] and Hooper.[5] Specimen records: J.H. Hudson 2858 (SASK, DAO). D.F. Hooper & L. Baker 8707-31050 (DFH). Brockelbank Hill. (Map 23).



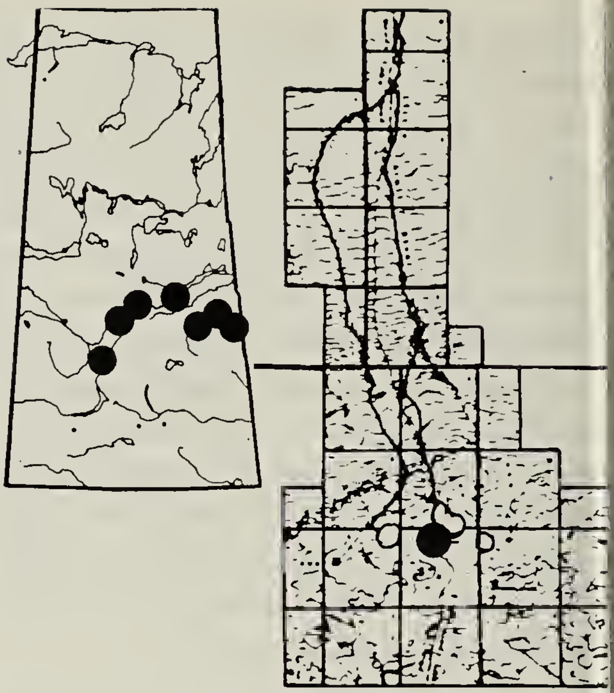
Map 23. *Milium effusum cisatlanticum*

.*Platanthera dilatata* (Pursh) Lindl. *Habenaria dilatata* (Pursh) Hook.] — ALL WHITE BOG ORCHID or BOG ANDLE. Wet Black Spruce muskeg. t Red Deer River north of Armit, reenbush, Bjorkdale, Nipawin, St. aurent, Macdowall, Prince Albert, and ike Lake south of Saskatoon. Although is orchid was omitted by Maher et al.[10] om the Saskatchewan rare plant list, it ppears at least as infrequently encountered as the Round-leaved Bog Orchid and various other species placed on that list, and should be added. Specimen records: D.F. Hooper 8307-1610 (SASK). Brockelbank Hill. (Map 24).

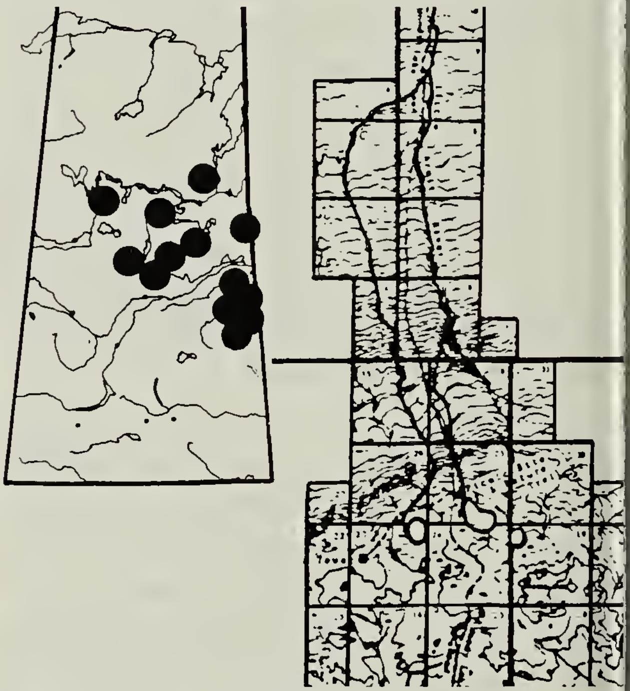
20. *Platanthera orbiculata* (Pursh.) Lindl. [*Habenaria orbiculata* (Pursh) Torr.]. — ROUND-LEAVED BOG ORCHID. (Orchidaceae). Moist spruce woods. Locally sparse at various southern boreal forest sites from the Porcupine Hills westward across the province. Reported by Hooper.[5] Specimen record: V.L. Harms, D.F. Hooper, L. Baker & L. Hooper 35079 (SASK). Brockelbank Hill. (Map 25).

21. *Polygonum viviparum* L. — ALPINE BISTORT. (Polygonaceae). Boggy Black Spruce woods. This subarctic species has been recorded from the north-eastern corner, Pasquia Hills, Cub Hills, and Fort-la-Corne. Reported by Harms,[2] Maher et al.[10] and Hooper.[5] Specimen records: J.H. Hudson 2890 (SASK); V.L. Harms, D.F. Hooper & L. Baker 34945 (SASK). Brockelbank Hill. (Map 26).

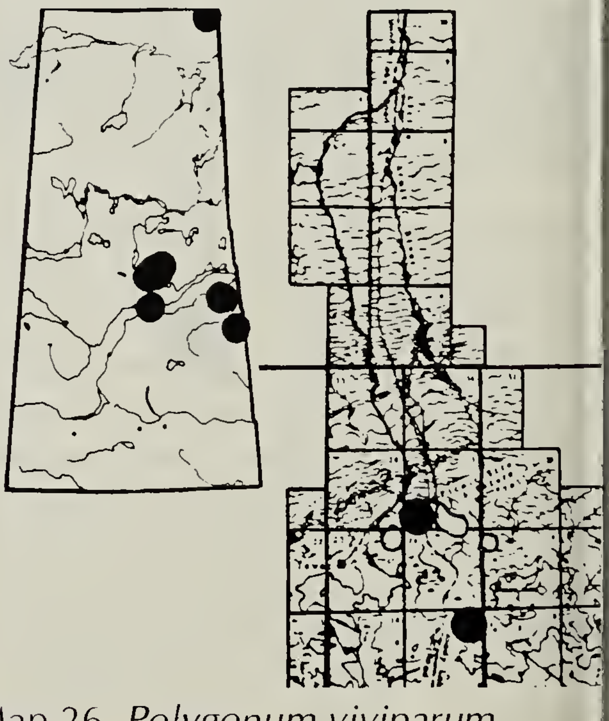
Polygonum viviparum — ALPINE BISTORT *S.M. Lamont*



Map 24. *Platanthera dilatata*

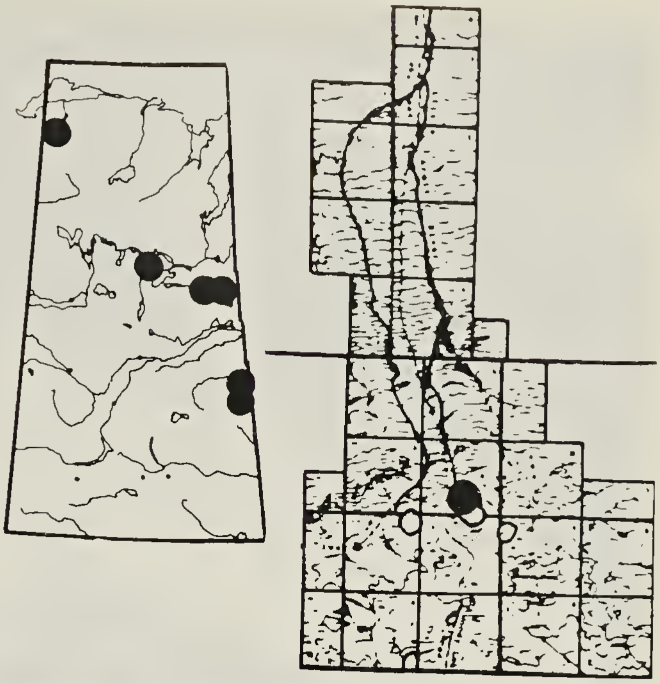


Map 25. *Platanthera orbiculata*



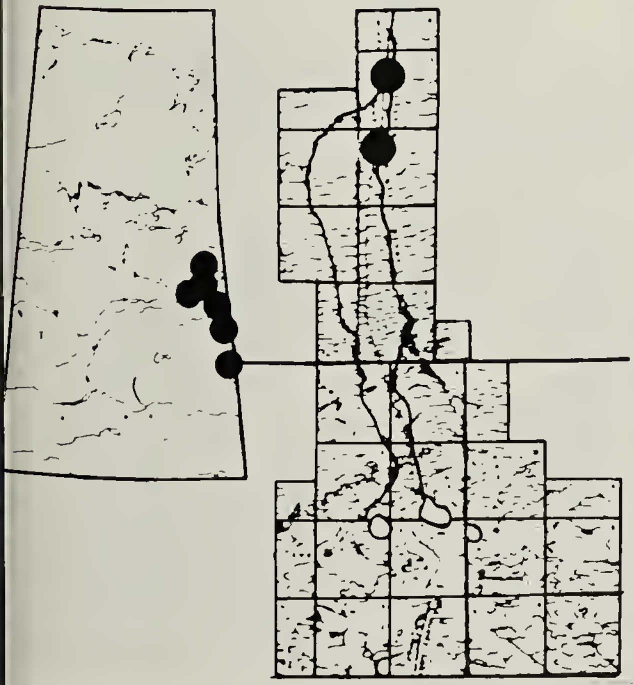
Map 26. *Polygonum viviparum*

2.*Potamogeton robbinsii* Oakes — ROBBIN'S PONDWEED. (Najadaceae). Submersed aquatic in shallow lake margins. Recorded at three widely spaced boreal sites – Cluff Lake, Nemeiben Lake, and east of Deschambault Lake. Reported by Hooper[5] and at Isbister Lake to the south by Hudson (31 August 1988). Specimen records: D.F. Hooper & L. Baker 8307-1608 (SASK); V.L. Harms, D.F. Hooper & L. Baker 34991 (SASK); J.H. Hudson 4826. Brockelbank Hill. (Map 27).



Map 27. *Potamogeton robbinsii*

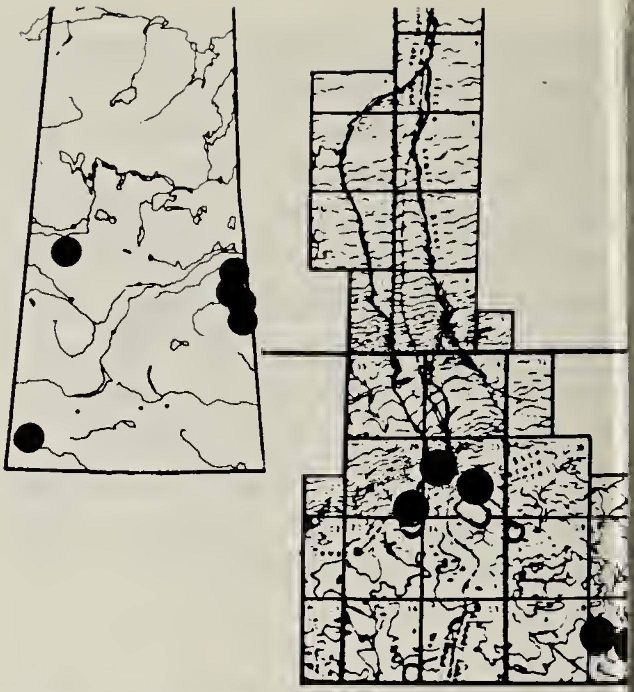
3.*Sambucus racemosa* L. ssp. *pubens* (Michx.) House. [*S. pubens* Michx.] — RED-BERRIED ELDER. (Caprifoliaceae). In moist deciduous and mixed woods, and on wooded banks. In east-central Saskatchewan, also occasional at Cumberland House, Pasquia Hills, and Duck Mountain. Reported by Hudson,[7,8] Harms,[2] Maher et al.[10] and Hooper.[5] Specimen records: J.H. Hudson 2929 (SASK); V.L. Harms, D.F. Hooper & L. Baker 32512 (SASK). Little Armit River. (Map 28).



p 28. *Sambucus racemosa pubens*

Sambucus racemosa pubens — *RED-BERRIED ELDER* *W.C. Harris*

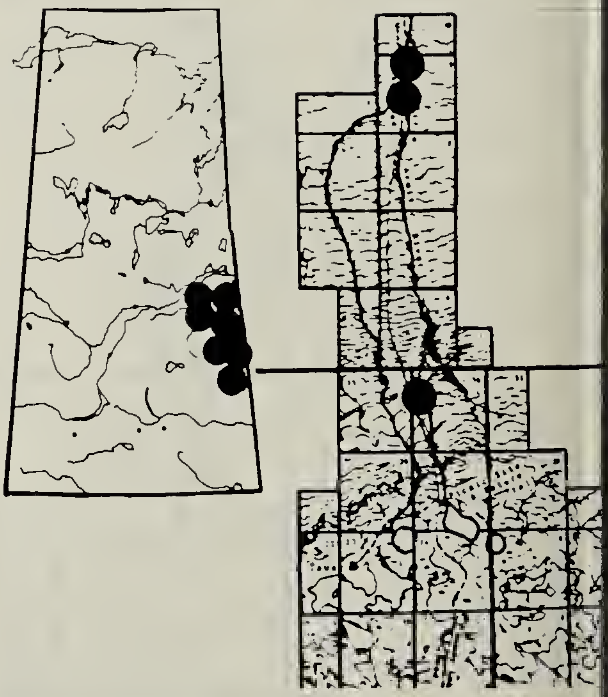
24. *Streptopus amplexifolius* (L.) DC. var. *americanus* Schultes — CLASPING-LEAF TWISTED STALK. (Liliaceae). Moist mixed woods. Occasional in the Pasquia Hills, Greenwater Lake Provincial Park, Cypress Hills, and land summit south of Meadow Lake. Reported by Harms,[2] Maher et al.[10] and Hooper.[4] [5] Specimen records: J.H. Hudson 2857 (SASK); V.L. Harms, D.F. Hooper & L. Baker 34868, 35000, 35083 (SASK); G.F. Ledingham, A. Marshall & W. Vanderwal 6234 (SASK, USAS). Brockelbank Hill. (Map 29).



Map 29. *Streptopus amplexifolius*

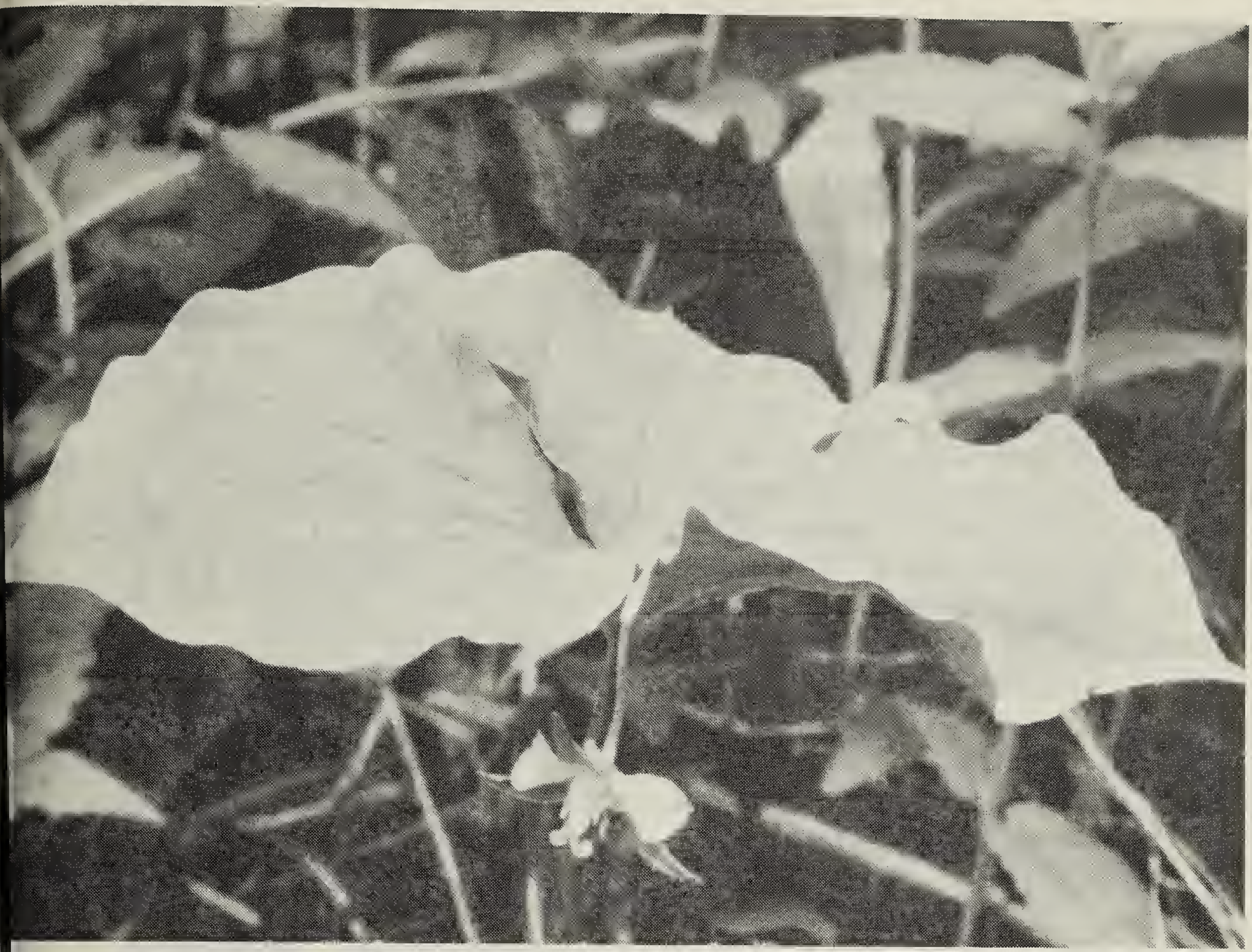
Streptopus amplexifolius — CLASPING-LEAF TWISTED STALK W.C. Ha

25. *Trillium cernuum* L. — NODDING TRILLIUM or WAKE-ROBIN. (Liliaceae). In moist floodplain woods on deep alluvial soil. Elsewhere scarce at scattered localities in east-central Saskatchewan. Reported by Hooper.[5] Specimen records: V.L. Harms & L. Baker 32482 (SASK); V.L. Harms, D.F. Hooper & L. Baker 32516, 32534 (SASK). Little Armit River. (Map 30).

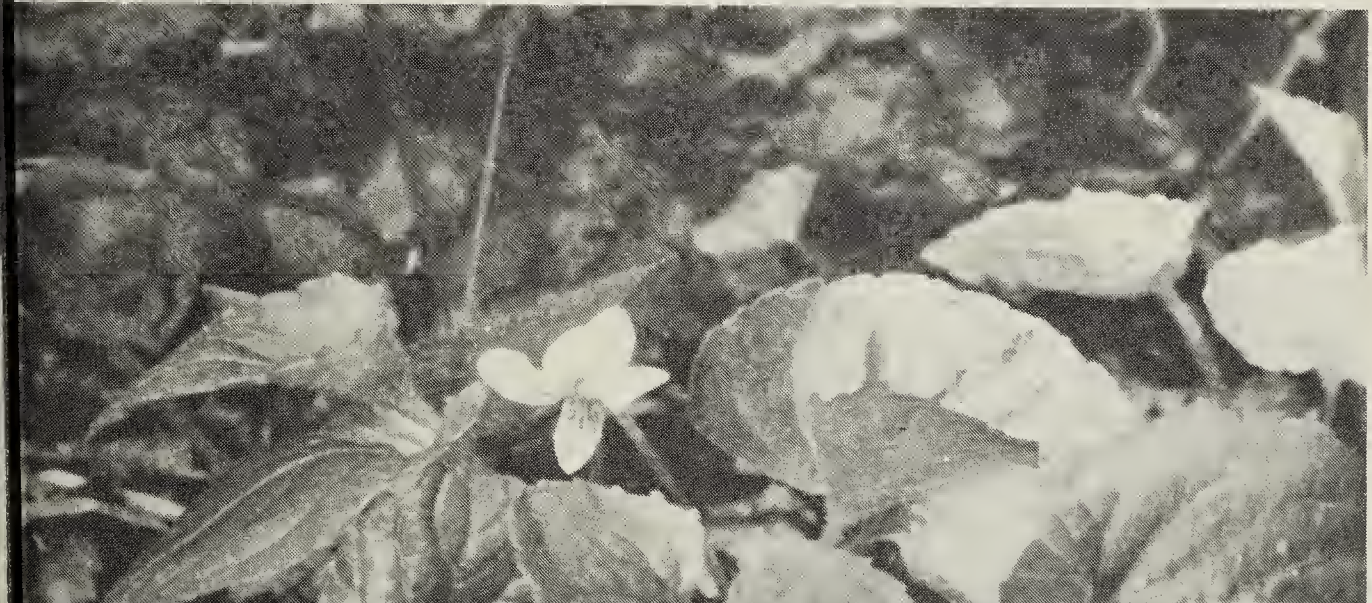


Map 30. *Trillium cernuum*

26. *Viola incognita* Brainerd — LARGE-LEAVED WHITE VIOLET. (Violaceae). Moist mixed woods. Only known from a Duck Mountain site recently discovered by Donald Hooper. These are the only localities yet recorded for this



illium cernuum — NODDING TRILLIUM *Wayne C. Harris*

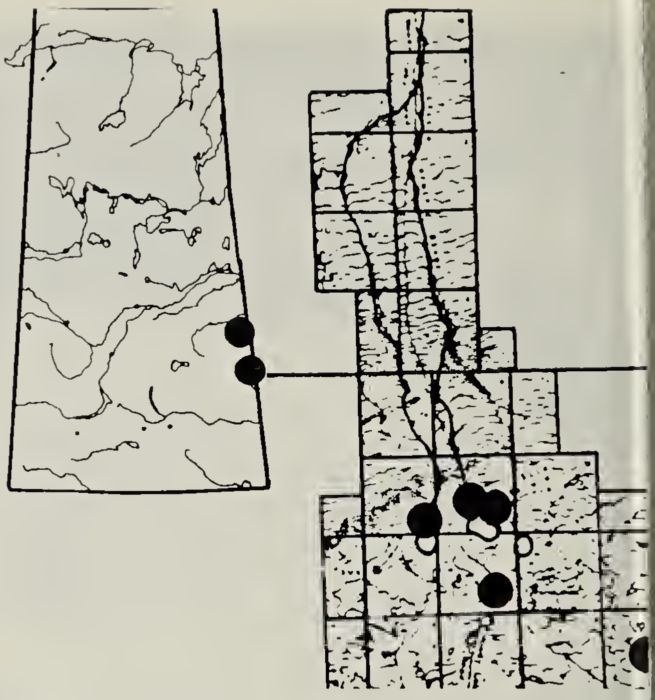


la incognita — LARGE-LEAVED WHITE VIOLET *Wayne C. Harris* species west of Minnesota and northeasternmost North Dakota. Reported here first by Hudson as *V. blanda*,[7] Harms et al.[3] and Hooper.[5] Specimen records: J.H. Hudson 2924 (SASK); V.L. Harms, D.F. Hooper & L. Baker 32129, 32133, 32134, 32157, 32486, 32495, 35036 (SASK); Hooper & Baker 8306-2903; Harms & Baker 32486, 32495, 32495, 32498 (SASK). Brockelbank Hill. (Map 31).

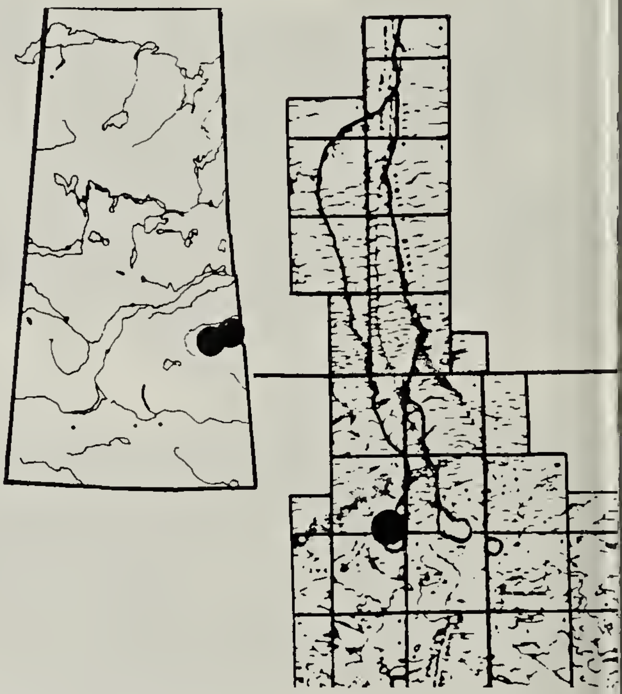
27. *Viola macloskeyi* Lloyd ssp. *pallens* (Banks) M.S. Baker [*V. pallens* (Banks) Brainerd]. — SWEET or NORTHERN WHITE VIOLET. (Violaceae). Wet lakeshore open bog-fen. One of only three known Saskatchewan localities, the other two near Chelan and Porcupine Plain. Reported by Harms et al.[3] and Hooper.[5] Specimen records: V.L. Harms, D.F. Hooper & L. Baker 32543, 34808 (SASK). Brockelbank Hill. (Map 32).

28. *Viola pubescens* Aiton var. *leiocarpa* (Fern. & Wieg.) Boivin — DOWNY YELLOW VIOLET. (Violaceae). In moist floodplain deciduous woods on deep alluvial soil. Recorded in Saskatchewan only from a 7 km stretch of the Little Armit River, plus one site on nearby Smoking Tent Creek representing the western range limit of this species. Reported by Hudson,[7] [8] Harms et al.,[3] and Hooper.[5] Specimen records: J.H. Hudson 2931 (SASK); V.L. Harms & L. Baker 32484; V.L. Harms, D.F. Hooper & L. Baker 32517 (SASK). Little Armit River. (Map 33).

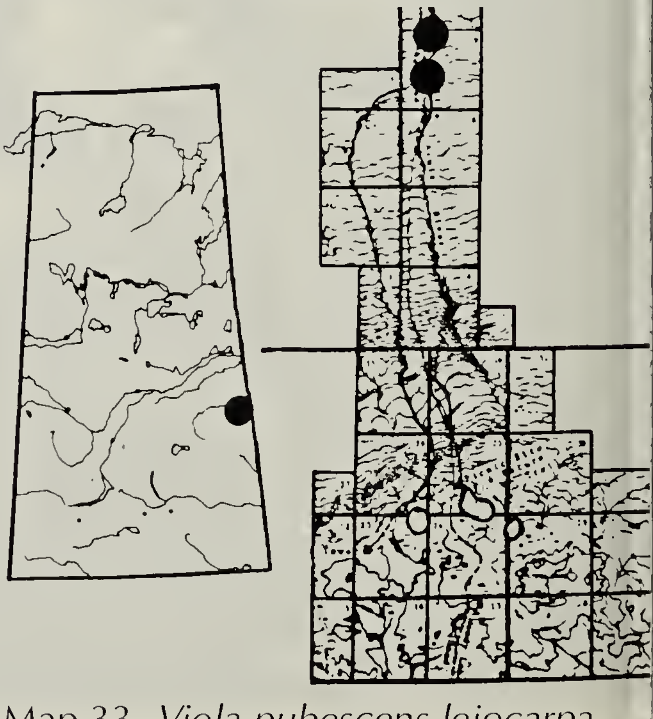
29. *Viola selkirkii* Pursh — SELKIRK'S or LONG-SPURRED VIOLET. In wet coniferous woods. Only recorded from sites in east-central Saskatchewan. Reported by Hudson,[7] [8] Harms,[2] Maher et al.,[10] Harms et al.,[3] and Hooper.[5] Specimen records: J.H. Hudson 2923 (SASK); V.L. Harms, D.F. Hooper & L. Baker 32487, 32500, 32525 (SASK).



Map 31. *Viola incognita*

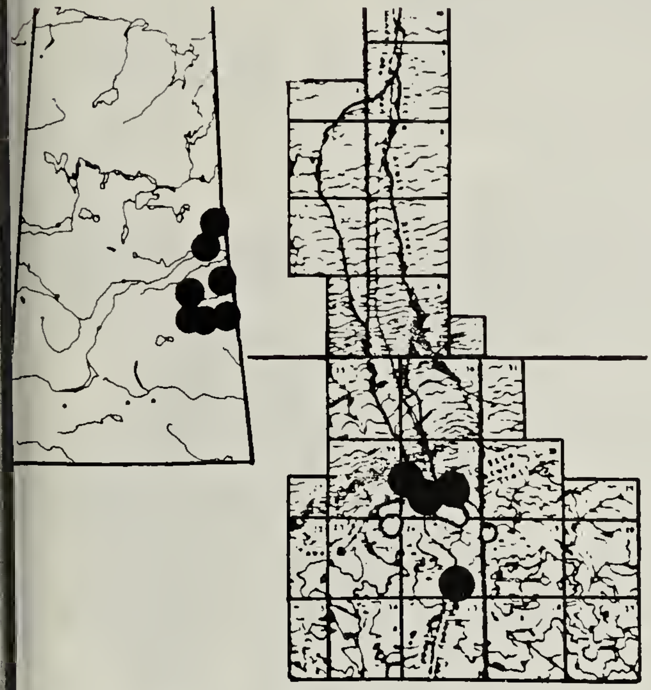


Map 32. *Viola macloskeyi pallens*



Map 33. *Viola pubescens leiocarpa*

Brockelbank Hill and Little Armit River. (Map 34).



ap 34. *Viola selkirkii*

ther Notable Plant Species

In addition to the foregoing list the fol- wing three species occur nearby and ay yet be discovered in the area as elimited in Map 2:

Calypso bulbosa (L.) Oakes — VENUS LIPPER or CALYPSO ORCHID. In rich oods at Townsend Lake in the Por- upine Hills south of Brockelbank Hill .F. Hooper & L. Baker 8906-0203, SK). Wide-ranging but sporadic and cally sparse, in the Cypress Hills and ross the boreal forest zone, north to ke Athabasca.

Prenanthes alba L. — WHITE LET- UCE. In rich moist mixed-woods along oody River in the Porcupine Hills south Brockelbank Hill (J.H. Hudson 3847, SK), and along the Little Armit River out 6.5 km (4 mi.) south of Armit (D.F. ooper). At various sites in east-central skatchewan from the Nitenai River, uth to Duck Mountain and Moose ountain.

Scutellaria lateriflora L. — BLUE ULLCAP. Along moist shores of Armit River about 8 km (5 mi.) se of Armit, about 10 km northeast of the presently defined Brockelbank Hill - Little Armit River area (D.F. Hooper & L. Baker s.n. & J.H. Hudson 2895, SASK). At various localities in Pasquia Hills, south to the Qu'Appelle , Souris and Antler river valleys.

Also occurring in the Brockelbank Hill - Little Armit River area are the following willow species that were listed as rare in nearby Manitoba by White and Johnson[12] although they are not considered rare in Saskatchewan:

Salix arbusculoides Anderss. — LITTLE-TREE WILLOW. On Brockelbank Hill.

Salix lasiandra Benth. [*S. lucida* Muhl. ssp. *lasiandra* (Benth.) Argus] — RED WILLOW. Along Little Armit River.

Two other plant species, with their provincial ranges limited to east-central Saskatchewan, although they are not considered provincially rare, which occur quite frequently in the proposed natural area are Showy Mountain Ash (*Sorbus decora* Sarg.) and Mountain Maple (*Acer spicatum* Lam.)

Mountain Maple *Wayne C. Harris*

THE LIMESTONE OAK FERN: NEW TO THE FLORA OF MANITOBA

KATHLEEN M. PRYER,* Botany Division, Canadian Museum of Nature, P.O. B
3443, Station D, Ottawa, Ontario. K1P 6P4

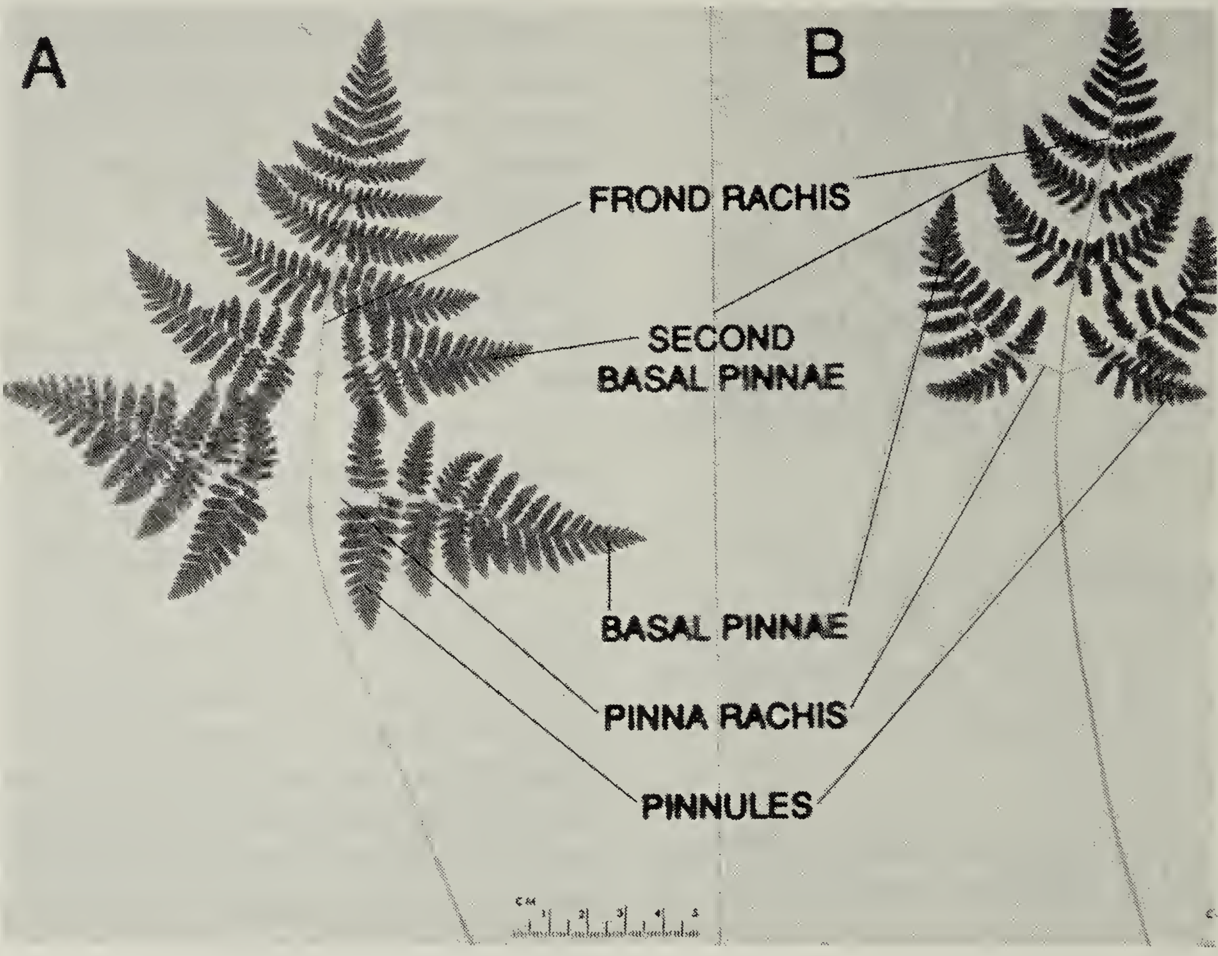


Figure 1. *Oak Fern frond silhouettes. A. Limestone Oak Fern B. Nahanni Oak Fern*

To those not acquainted with some of the recent taxonomic literature pertaining to the Oak Fern genus (*Gymnocarpium*), the title of this article will be puzzling indeed.[3] [4] [5] Most botanists are familiar with the genus as comprising only two species, the Common Oak Fern (*G. dryopteris* (L.) Newm.) and the Limestone Oak Fern (*G. robertianum* (Hoffm.) Newm.). Prior to Sarvela's worldwide synopsis of the genus,[4] these two species were regarded as each having a broad distribution in Canada that extended from the Yukon to Newfoundland.[7] According to Scoggan, the Limestone Oak Fern had a wide range in Manitoba from Lake o the Woods to as far north as Reindee Lake.[6]

Sarvela presented a startling revision o what was known as the Limestone Oak Fern in North America. He segregated th species into two taxa: *G. robertianum s.s.* restricted to the east (Newfoundland New Brunswick, Quebec, Ontario and a few states in the Great Lakes region), and *G. jessoense* (Koidz.) Koidz. ssp. *parvulum* Sarvela — the Nahanni Oak Fern occurring westward from Ontario to Alaska.[4] [5] The Limestone Oak Fern was there

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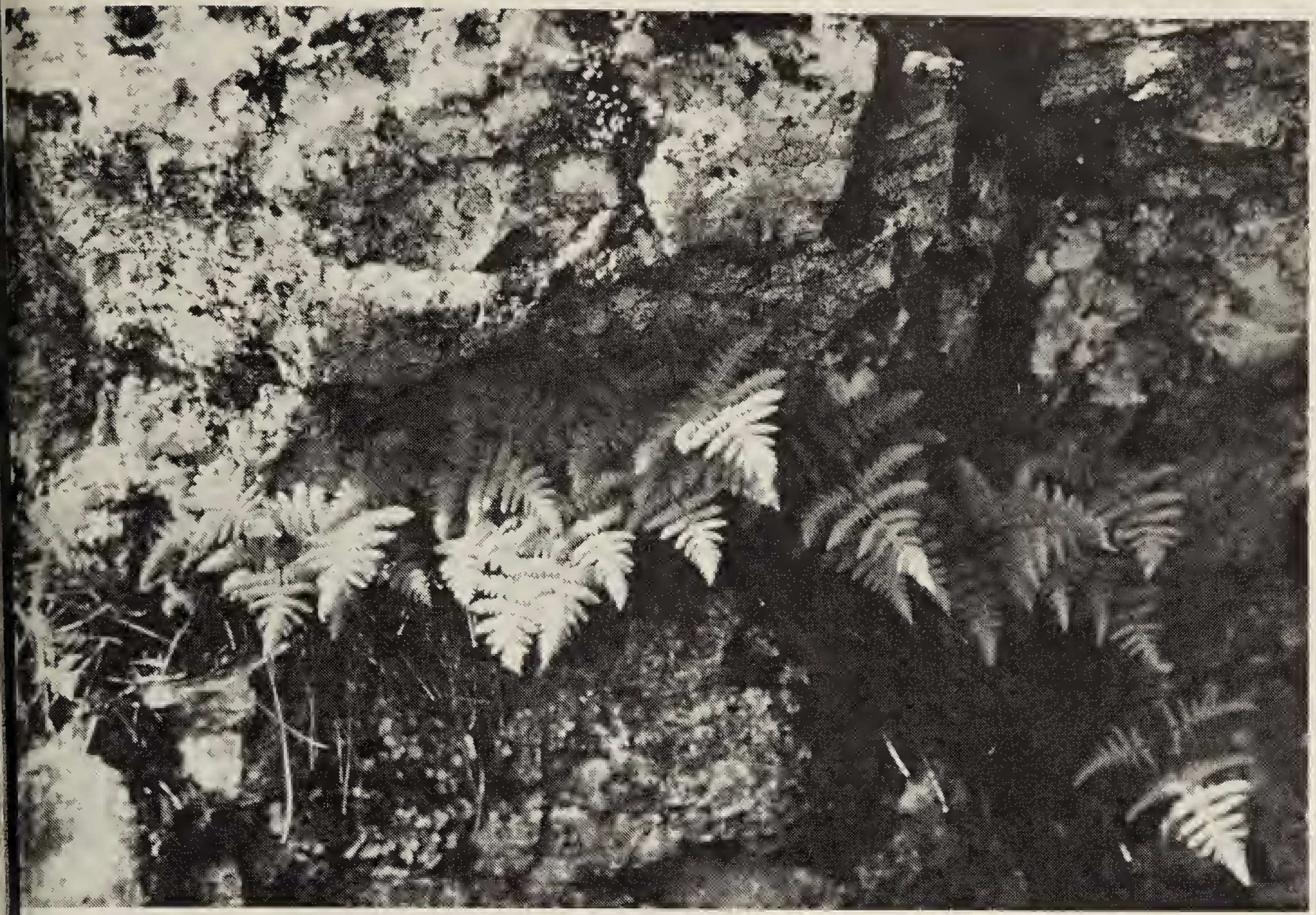
* Present address: Department of Botany, Duke University, Durham, North Carolina. 27706



igure 2. *Limestone Oak Fern fronds growing on limestone outcrop in Interlake region,Manitoba* *M.J Shchepanek*

y "eliminated" from the flora of
lanitoba, and plants that formerly had
een referred to that species in the
ovince and westward were identified as
e Nahanni Oak Fern.[3 4 5] Frond silhouet-
s of these two taxa are shown in Fig. 1
d comparative information for the three
ecies of Oak Fern found in Manitoba is
mmarized in Table 1. Hybrids between
Nahanni Oak Fern and the Common
k Fern are present in Manitoba
herever these two taxa occur together.
ese plants are known as the Inter-
ediate Oak Fern (*G.* x *intermedium* Sar-
la). They are intermediate in their frond
rphology and glandularity, and can be
dily distinguished by their blackish,
lformed, abortive spores.

ccording to its new circumscription,
Limestone Oak Fern has a restricted
ge and is regarded as a rare species in
nada.[1] Although there are numerous
alities for it in eastern Canada, espe-
lly in Ontario and Quebec where it is
lely distributed, the populations are
small at all verified sites. The following two specimen citations represent the only confirmed records for this newly circumscribed species in Manitoba and are the westernmost localities in North America: 3 mi. n of Cranberry Portage, rock crevices in limestone cliffs, 10 July 1974, K. Johnson J74-45 (MMMN); Interlake region, 37 km n of Grand Rapids, off Hwy. 6, low escarpment in Jack Pine-spruce woods on limestone outcrop, 12 August 1982, M.J. Shchepanek & A.W. Dugal 4762 (BRY, CAN, ILL, LEA, MICH, MIN, MMMN, OAC, SASK, USAS).[2] Fig. 2 is a photograph of fronds of the Limestone Oak Fern taken at the second locality. This rare fern should be looked for on limestone cliffs and outcrops elsewhere in Manitoba.

Acknowledgements

George W. Argus, Daniel F. Brunton and François Lutzoni provided helpful comments on the manuscript. I am grateful to Michael J. Shchepanek for permission to reproduce his photograph from

Table 1. COMPARISON OF COMMON, LIMESTONE AND NAHANNI OAK FERN

CHARACTERS	COMMON OAK FERN *G. dryopteris*	LIMESTONE OAK FERN *G. robertianum*	NAHANNI OAK FERN *G. jessoense* ssp. *parvulum*
Overall frond appearance	ternate	obscurely ternate	obscurely ternate
Frond outline	widely triangular	widely triangular to widely trullate (trowel-shaped)	narrowly triangular to narrowly ovate
Frond texture	lax and delicate	usually firm and robust	firm and robust , or lax and delicate
Glandularity	rachis, lower and upper blade surfaces essentially glabrous (i.e. glandular trichomes very occasional)	rachis, lower and upper blade surfaces densely to moderately glandular	rachis and lower blade surface moderately glandular; upper blace surface glabrous
Aspect of basal pinnae relative to frond rachis	extended more or less perpendicularly along their entire length	extended more or less perpendicularly along their entire length	strongly curved towards tip of frond
Aspect of pinnules on lower half of basal pinnae relative to pinna rachis	extended more or less perpendicularly along their entire length	extended more or less perpendicularly along their entire length	strongly curved towards tip of pinna
Condition of second basal pinnae	almost always sessile with basal pinnules about equal in length to second basal pinnules	usually stalked; if sessile, with basal pinnules usually shorter than second basal pinnules	almost always sessile with basal pinnules about equal in length to second basal pinnules
Ratio of longest basal pinna to blade*	4:5	2:3	2:3
Ratio of longest basal pinnule of basal pinnae to blade**	1:3	1:4	1:4
Spores	light brown, kidney-shaped	light brown, kidney-shaped	light brown, kidney-shaped
Mean exospore length	34 - 36.2 - 39 microns	34 - 36.6 - 39 microns	32 - 34.2 - 37 microns
Chromosome number	n = 80	n = 80	n = 80
Habitat	commonly found in cool, coniferous and mixed woods, and at base of shale talus slopes; avoids calcareous substrates	calcareous substrates: limestone pavement, outcrops, and cliffs; treed fens	prefers summit of cool shale talus slopes, granite cliffs and outcrops; avoids strongly calcareous substrates
Canadian range	in all provinces and both territories	Manitoba to New Brunswick; Newfoundland	British Columbia to New Brunswick
Rarity	common throughout Canadian range	rare throughout Canadian range	rare in New Brunswick & Quebec

* length measured from junction of rachis and basal pinnae

** latter length measured as above

he Interlake region and to the respective urators of those herbaria cited above.

[1] ARGUS, G.W. and K.M. PRYER. 1990. Rare vascular plants in Canada — Our natural heritage. Can. Mus. of Nature, Ottawa. In press.

[2] HOLMGREN, P.K., W. KEUKEN and E.K. SCHOFIELD. 1981. Index herbariorum. Part 1. The herbaria of the world. Seventh edition. W. Junk, Boston.

PRYER, K.M., D.M. BRITTON and J. McNEILL. 1983. Systematic studies in the genus *Gymnocarpium* Newman in North America. *Am. J. Bot.* 70:60.

[4] SARVELA, J. 1978. A synopsis of the fern genus *Gymnocarpium. Annales Botanici Fennici* 15:101-106.

[5] SARVELA, J., D.M. BRITTON and K.M. PRYER. 1981. Studies on the *Gymnocarpium robertianum* complex in North America. *Rhodora* 83:421-431.

[6] SCOGGAN, H.J. 1957. Flora of Manitoba. *Nat. Mus. of Can. Bull.* No. 140, Ottawa.

[7] SCOGGAN, H.J. 1979. The flora of Canada. Part 2. Nat. Mus. of Natural Sciences, Ottawa.

MALL MAMMALS AS PREY FOR ROOK TROUT

.H. KOONZ, Manitoba Department of Natural Resources, Box 14, 1495 St. James
eet, Winnipeg, Manitoba. R3H 0W9

n 1975 and 1976 the Manitoba epartment of Natural Resources concted studies on sea-run Brook Trout *lvelinus fontinalis*) in Nine-mile Creek, ributary of the Limestone River which turn enters the Nelson River some 90 inland from Hudson Bay. Fifty-five of trout stomachs examined contained d items of which 8 contained small mmals including 7 voles, (three *thrionomys* spp., four *Microtus* spp.) one shrew (*Sorex* spp.).[1]

rook Trout from the Gods River near mouth of the Red Sucker River °19′N, 92°30′W) were milked for wn by Department of Natural Resour- staff in early September 1989. Four of e fish were examined for food items ain Strate, pers. comm.) One nearly ct meadow vole (*Microtus pennsyl- icus*) was found.

ese observations concur with those cott and Crossman suggesting that small mammals may at times provide a food source for some fish species in certain water systems, particularly in more northerly areas where nutrients are scarce and small mammal populations fluctuate considerably.[2]

Several small mammal species will readily swim while predatory fish will strike at any reasonably-sized object travelling through the water. These observations suggest that small mammals are likely more vulnerable to fish predation than is generally thought.

[1] GABOURY, M.N. 1980. The biology of brook trout (*Salvelinus fontinalis*) populations in the lower Nelson River area, Manitoba. M. Sc. thesis, Univ. of Waterloo, Ont. 138 pp.

[2] SCOTT, W.B. and E.J. CROSSMAN. 1973. Freshwater fishes of Canada. Fisheries Research Board of Canada, Ottawa. 212 pp.

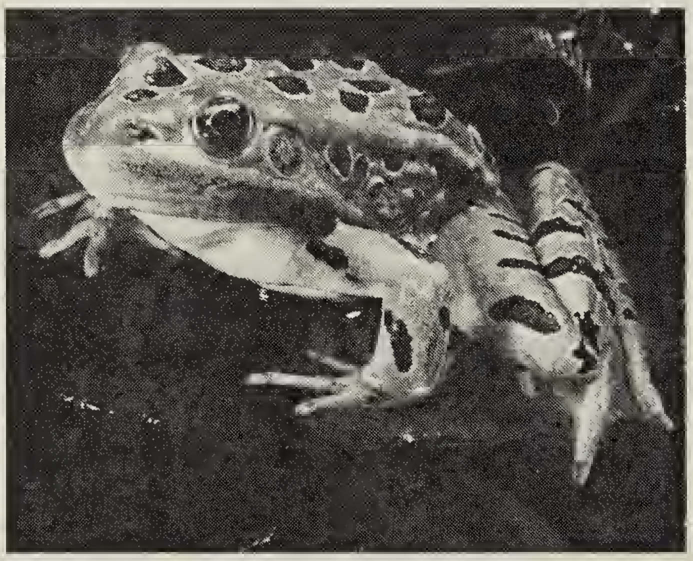
WESTERN HOGNOSE SNAKE OBSERVATIONS WANTED

The Wildlife Branch is looking into the distribution and abundance of the Wester Hognose Snake in Saskatchewan. This snake is recognized by its heavy, blotched bod and upturned snout. It is found in the dry,sandy or gravelly plains and river floodplai of the southern part of the province. Its behavior, when disturbed, of spreading its hea and neck and hissing with open mouth while striking, but seldom biting, is responsibl for its common names "puff adder," "blow viper," and "hissing adder." This snake wi also play possum by writhing belly up, then lying still with mouth open and tongu lolling.

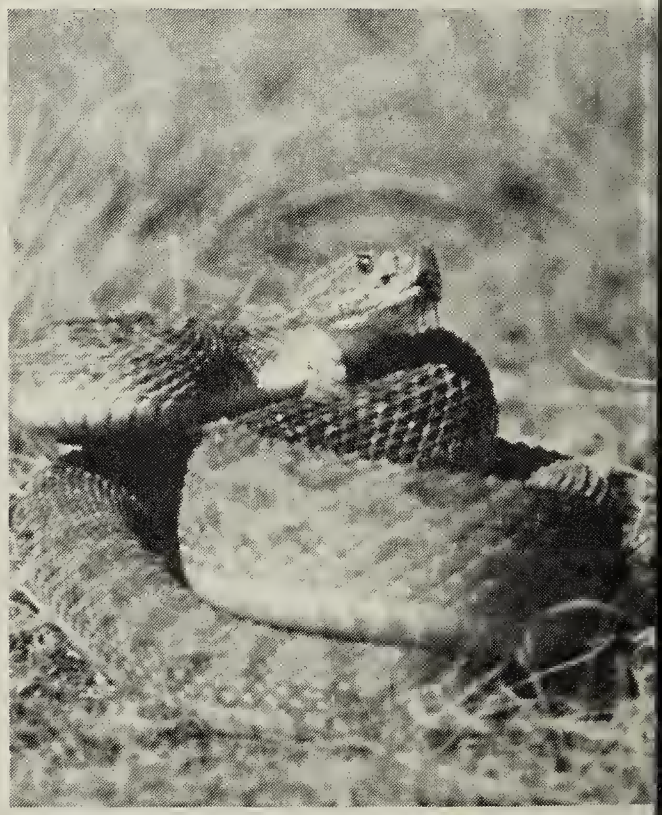
If you have any observations of this snake from any time in the past, please repo them to **Dale Hjertaas, Wildlife Branch, 3211 Albert Street, Regina, Saskatchewa S4S 5W6** Telephone (306) **787-2892**.

INFORMATION NEEDED ON SASKATCHEWAN HERPS

During the past few years several species of previously common amphibians a reptiles have become increasingly uncommon; most notable among these are t Leopard Frog and the Prairie Rattlesnake. Even the common gartersnakes are bei reported less often than they were 10 years ago. This may be a result of a series of d years in some parts of the province but even in wetter areas numbers are down. If y would be interested in providing information on one of Saskatchewan's least kno faunal groups from your area please let me know. I would be willing to provi information on identification and in the case of the frogs could provide tape recordin of most species to facilitate identification. If you are interested in providing informati from the past or in the future please contact **Wayne C. Harris, Box 414, Raymo Saskatchewan. S0A 3J0** Telephone (306) **746-4544**.



Leopard Frog *Hans Dommasch*



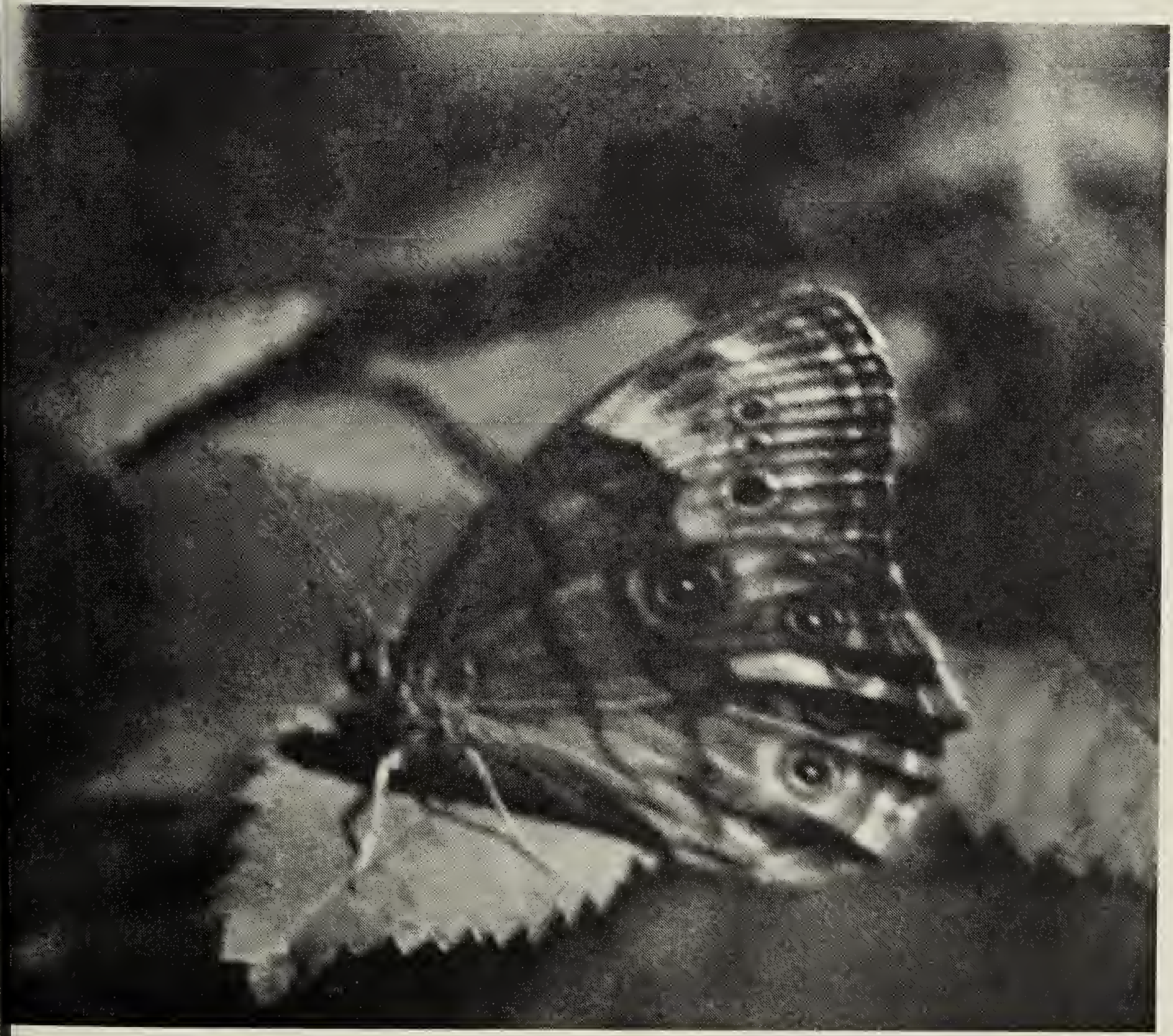
Prairie Rattlesnake *Wayne Lyn*

NORTHERN PEARLY EYE — NEW FOR ALBERTA

HAROLD W. PINEL, 1017 - 19 Avenue N.W., Calgary, Alberta. T2M 0Z8

While camping in the Cold Lake area ear the end of June 1990, I observed and ollected specimens of the Northern early Eye, *Enodia anthedon*. This pecies of butterfly was not previously nown to occur in Alberta.

I first observed the Northern Pearly Eye uring mid-morning on 29 June in Cold ake Provincial Park. It was flying in thick nderstory near a hiking trail in open ixed aspen/spruce woods. Now and gain, it would land on the trunk of an aspen tree or on some deadfall. I could approach it closely, and recognized it immediately as a species of Satyrid butterfly with which I was unfamiliar. Its very striking appearance made it easy to identify as a Northern Pearly Eye when I checked my field guide. This butterfly can readily be separated from the Eyed Brown (*Enodia eurydice*) by its larger size, darker coloration, pointed forewings, and scalloped outer margins of its hindwings. The two species also occur in different habitats. The Northern Pearly Eye prefers



rly Eye *Don Hooper*

damp deciduous woods, whereas the Eyed Brown is a butterfly found in open sedge marshes. Table 1 summarizes my observations of Northern Pearly Eye in 1990.

The distribution of this species in western Canada, particularly in Alberta, has been variably reported to date. Tilden and Smith do not even mention this species as occurring in western Canada.[8] Klots, Howe, and Pyle give Manitoba as the western range limits for this species in Canada.[5] [3] [6] Hooper records this species in poplar woods in southeastern Saskatchewan, north and west to Meadow Lake Provincial Park.[1] [2] Scott, and Klassen *et al.* depict the range of this species as just entering east-central Alberta, but I have not seen substantiating evidence.[7] [4] N. Kondla, keeper of the records for Alberta butterflies, says that the records in this article are the first authenticated records to his knowledge (pers. comm.).

The number of individuals observed and the scattered locations indicate that the Northern Pearly Eye is not acciden in Alberta. It is doubtful that this speci was previously overlooked because of abundance and obvious nature. Furthe more, the habitat in which this speci occurs in Alberta is more or less co tinuous eastward to known collecti localities in Saskatchewan, so the occu rence of this species in Alberta was pected. I believe that this species has n been previously reported for Alberta b cause of a lack of field work in ea central Alberta during July.

The larvae fed on a number of differe grass species including False Mel (*Schizachne purpurascens*) and Reed C nary Grass (*Phalaris arundinacea*). Adu have been reported feeding on sap, dur fungi, carrion and mud. The observati dates listed in Table 1 are within the flig period of late June to early August giv for Saskatchewan and Manitoba.[1] [4] Mo field work in east-central Alberta needs be done to determine this species' ran and flight period.

Table 1. OBSERVATIONS OF NORTHERN PEARLY EYE IN ALBERTA, 1990.

Date	*Location*	*Number*	*Remarks*
29 June - 2 July inclusive	Cold Lake P.P.	10+ daily	Observed flying in aspen woods and mixed woods with thick understory, especially Beaked Hazelnut (*Corylus cornuta*. Landed on tree trunks, logs ar shrubs. Very sluggish in early morning caught some individuals with my hand
1 July	Little Bear Lake (w shore) T64-R2-W4	16+	Flying in aspen with dense Beaked Ha nut understory as well as landing on ground in open moist area at lake's ed Few specimens collected.
1 July	English Bay Campground	1	Flying at edge of clearing in mixed woods. (Pond w of Cold Lake.)
4 July	Ross Lake Campground Whitney Lakes P.P.	1	Flying in aspen woods with mainly Beaked Hazelnut understory.

Acknowledgement

I would like to thank Norbert Kondla for verifying that there were no previous Alberta records and for reviewing the manuscript.

[1] HOOPER, R.R. 1973. Butterflies of Saskatchewan. Sask. Dept. Natural Resources, Regina. 216 pp.

[2] HOOPER, R.R. 1986. Revised checklist of Saskatchewan butterflies. *Blue Jay* 44(3):154-163.

[3] HOWE, W.H. 1975. The butterflies of North America. Doubleday & Co., Inc., Garden City, N.Y. 633 pp.

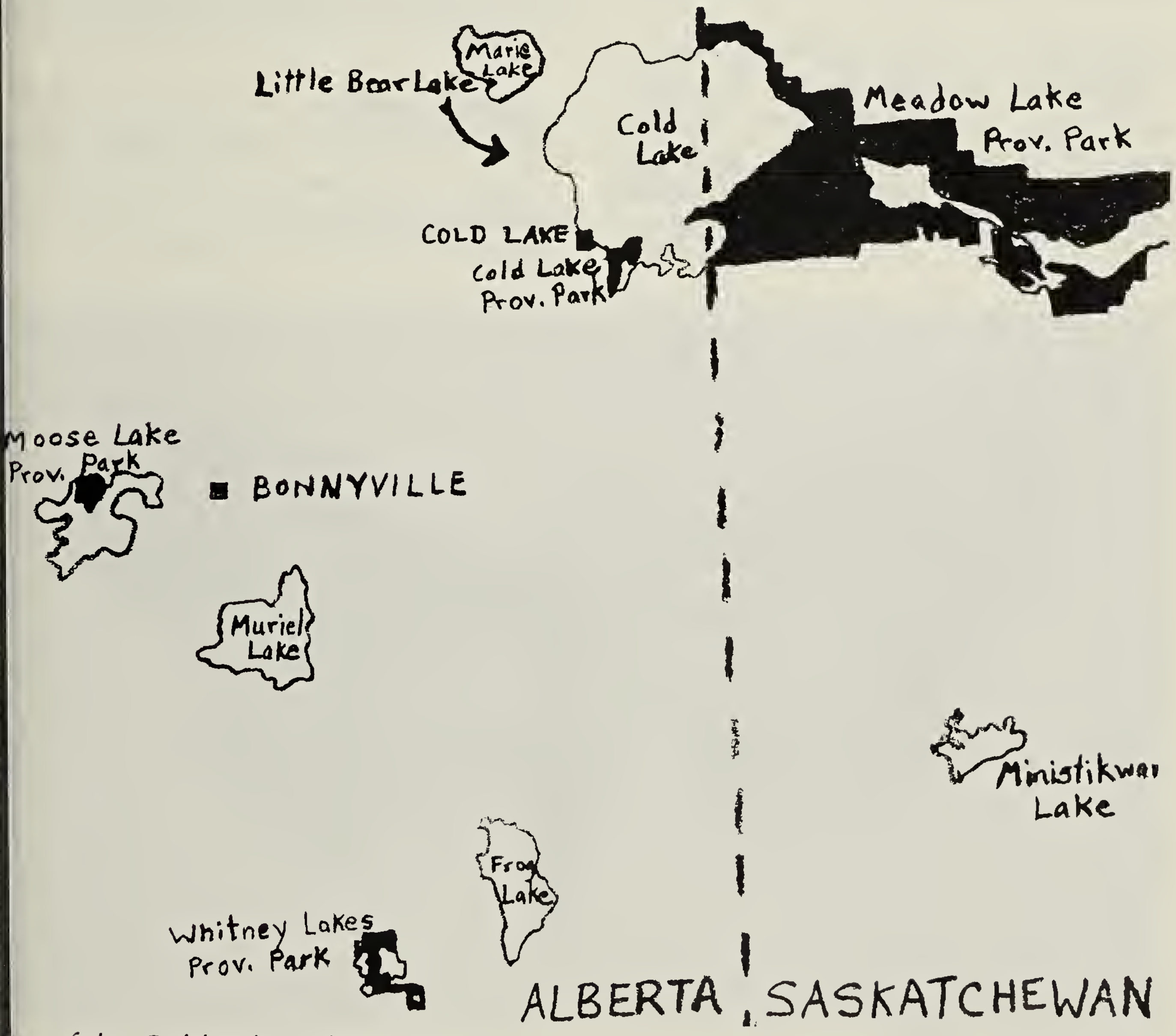
[4] KLASSEN, P.L, A.R. WESTWOOD, W.B. PRESTON and W.B. McKILLOP. 1989. The butterflies of Manitoba. Man. Mus. of Man and Nature, Winnipeg. 290 pp.

[5] KLOTS, A.B. 1951. A field guide to the butterflies. Houghton Mifflin Co., Boston. 349 pp.

[6] PYLE, R.M. 1981. The Audubon Society field guide to North American butterflies. Alfred A. Knopf, N.Y. 924 pp.

[7] SCOTT, J.A. 1986. The butterflies of North America. Stanford Univ. Press, Stanford, California. 583 pp.

[8] TILDEN, J.W. and A.C. SMITH. 1986. A field guide to western butterflies. Houghton Mifflin Co., Boston. 370 pp.



p of the Cold Lake, Alberta area

CHECK-LIST OF SASKATCHEWAN MOTHS

PART 7: SUMACH MOTHS (EUTELIINAE), SARROTHRIPIN MOTHS (SARROTHRIPINAE), NOLIN MOTHS (NOLINAE), MIDGETS (ACONTIINAE), PANTHEIN MOTHS (PANTHEINAE)

RONALD R. HOOPER, Saskatchewan Museum of Natural History, 2340 Albert Stree
Regina, Saskatchewan. S4P 3V7

In the following text these abbreviations are used: s = south, n = north, w = west, e = east, CNC = the only Saskatchewan records of the species that we know of are in the Canadian National Collection in Ottawa. Unless otherwise indicated all the species are represented in the collection of the Saskatchewan Museum of Natural History, Regina.

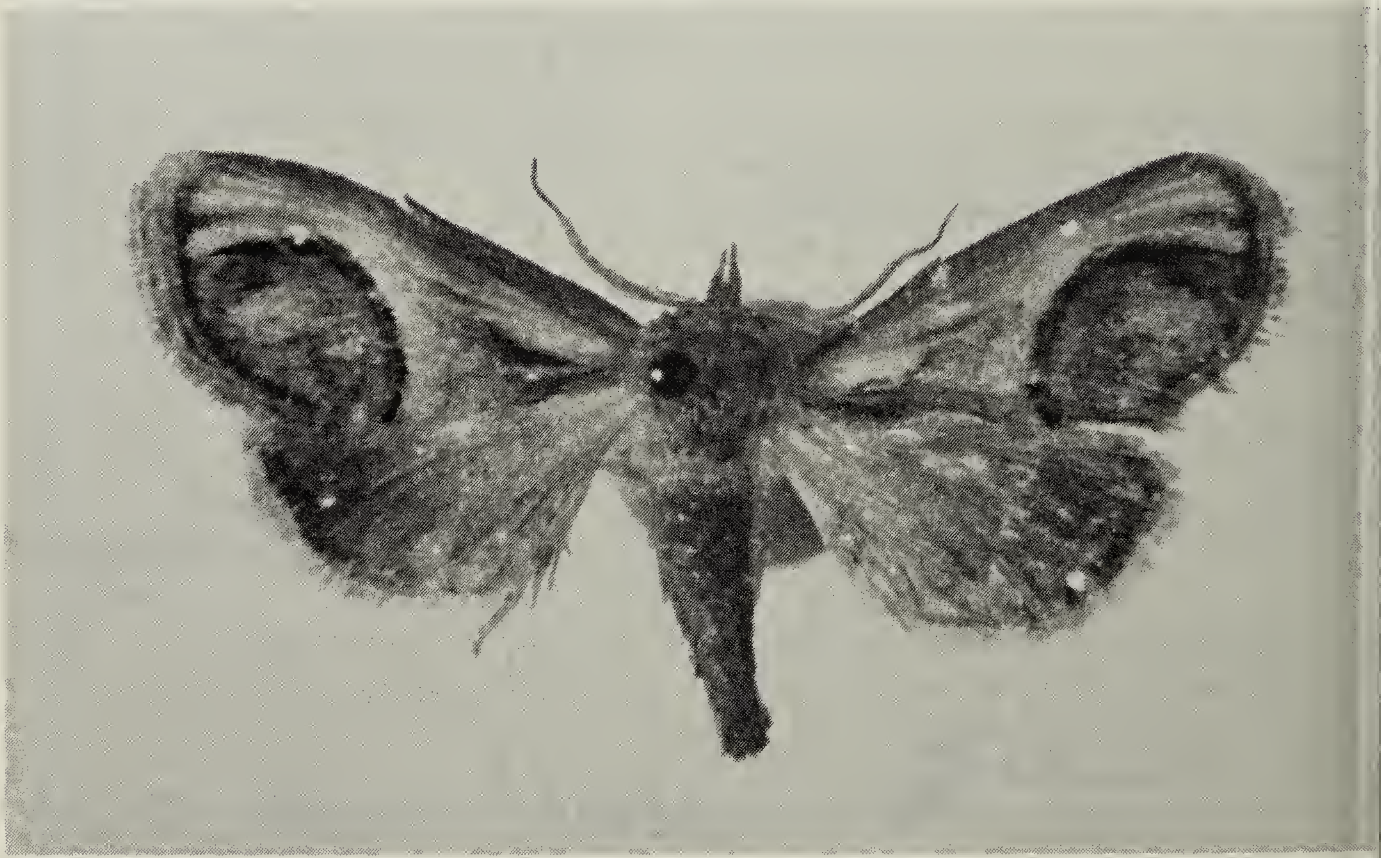
EUTELIINAE - Sumach Moths

These are small moths 25 - 35 mm in wing span. Superficially they resemble Pyralid Moths (Pyralidae), but with broader bodies, and lacking elongated palpi. The hind wing often has a flattened lower edge instead of being even
rounded. At rest the forewings a
wrapped around the hind wings, wi
abdomen elevated. Most species feed o
the Sumach family (Anacardiaceae). O
species feeds on Poison Ivy (*Rh*
radicans).

Eyed Paectes - *Paectes oculatrix* (Gn.)
Tantallon.

Expected species

Dark Marathyssa - *Marathyssa infici*
(Wlk.) - e Canada, w to Manitoba ar
British Columbia



Eyed Paectes *Lorie Melit, S.M.N.*

SARROTHRIPINAE - Sarrothripin Moths

These are small moths 22 - 34 mm in wing span with long fore-wings which are broadened at the base giving a slightly rounded fore-edge as in Tortricid Moths (Tortricidae). The caterpillars feed on deciduous trees and shrubs.

Doubleday's Baileya - *Baileya doubledayi* (Gn.) - Tantallon.

Eyed Baileya - *B. ophthalmica* (Gn) - se Saskatchewan, w to Punnichy; n to Love.

Frigid Owlet - *Nycteola frigidana* (Wlk.) - central Saskatchewan,s to Whitewood area, n to Otter Rapids area.

NOLINAE - Nolin Moths

Small grey or white moths with a post-median band of raised scales on the upper side of the fore-wings. The males have "feathered" antennae.

Confused Meganola - *Meganola minuscula* (Zell.) - Tantallon and Maryfield.

Blurry-patched Nola - *Nola cilicoides* (Grt.) - s Saskatchewan,n to Wadena.

ACONTIINAE - Midgets

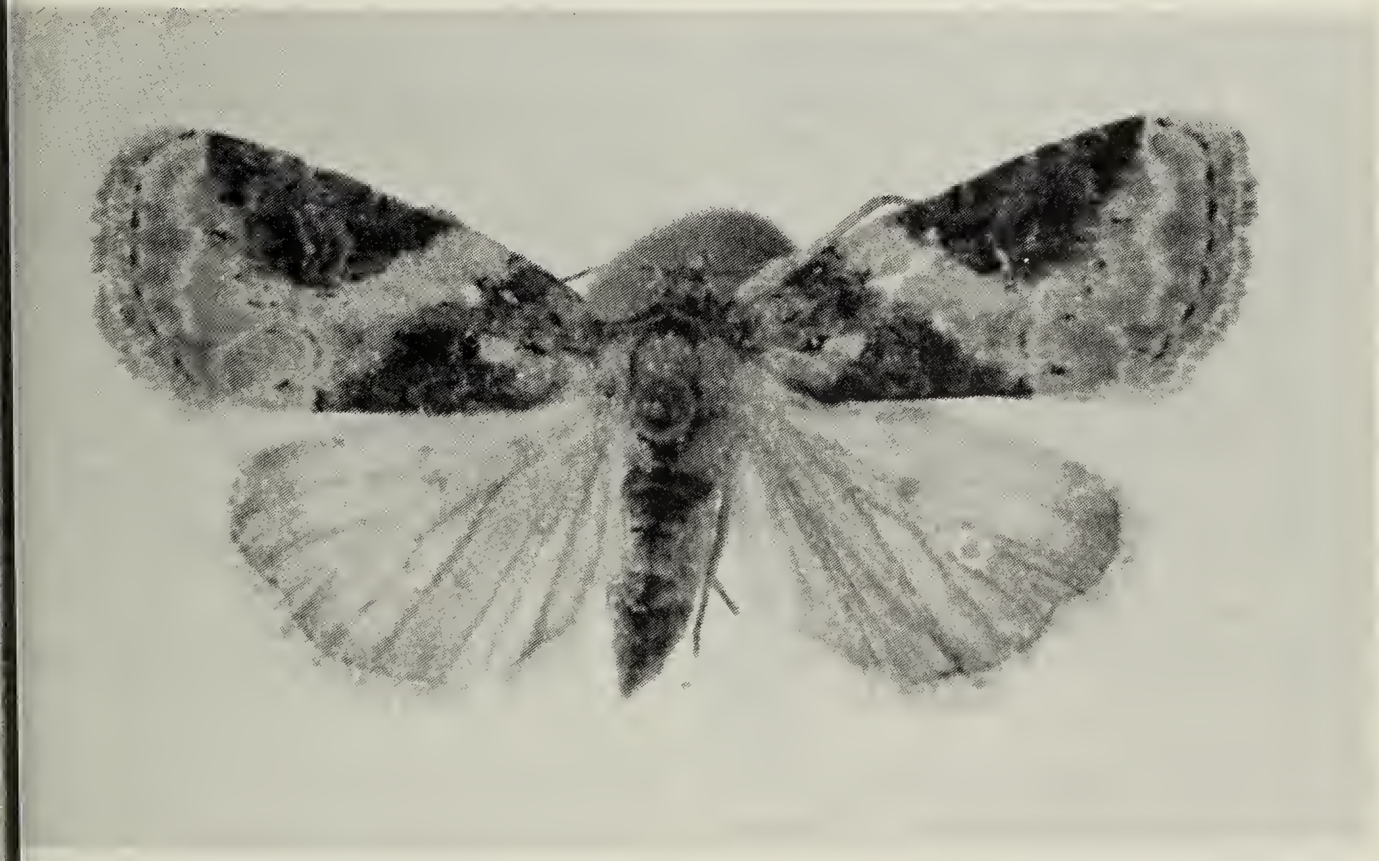
These are relatively small moths with a wing span from 16 to 30 mm. They have the head usually rounded in front with the elongated palpi upturned. The hind-wings are usually unmarked. A number of the species have a contrasting black and white pattern on the fore-wings. When they are wrapped around the body at rest it provides protection by giving the insect the appearance of a bird dropping. Most of the caterpillars are semi-loopers because they lack some of their prolegs.

Bog Lithacodia - *Lithacodia bellicula* Hbn. - Earl Grey, Saskatoon, Carrot River, Aylsham and Canwood.

Common Midget - *L. albidula* (Gn.) - n Saskatchewan, s to Northgate, Fort Qu'Appelle and Unity.

Black-dotted Lithacodia - *L. synochitis* (G. & R.) - Roche Percee and Rockglen.

Pink-barred Lithacodia - *L. carneola* (Gn.) - s Saskatchewan, n to Erwood and Aylsham.



nk-barred Lithacodia *Lorie Melit, S.M.N.H.*

Yellow-cloaked Midget *Lorie Melit, S.M.N.H*

Pale-tipped Midget - *Capis curvata* Grt. - Tantallon and Carrot River.

Brown Leuconycta - *Leuconycta lepidula* (Grt.) - e Saskatchewan, w to Buffalo Pound Provincial Park, n to Cumberland House.

Yellow-cloaked Midget - *Tarachidia semiflava* (Gn.) - s Saskatchewan, n to Prince Albert.

Prairie Bird-dropping Moth - *T. binocula* (Grt.) - s Saskatchewan, n to Wadena and Saskatoon.

Olive-shaded Bird-dropping Moth - *T. tortricina* (Zell.) - s Saskatchewan, n to Fort Qu'Appelle and Saskatoon.

Arizona Bird-dropping Moth - *Conochares arizonae* (Hy.Edw.) - Killdeer, Val Marie and Swift Current.

Narrow-winged Midget - *Therasea augus tipennis* (Grt.) - s Saskatchewan, n t Aylsham.

Yellow-costa Midget - *T. flavicosta* (Sm.) Rockglen, Val Marie and Tompkins.

Sutrix Bird-dropping Moth - *Ponometi sutrix* (Grt.) - Saskatoon (CNC).

Expected Species:

Pitcher-plant Moth - *Exyra rolandian* Grt. - w to Aweme, Manitoba. The larv feeds on Pitcher-plant (*Sarracenia pu purea*).

Fasciatella Midget - *Fruva fasciatell* (Grt.) - n to Aweme, Manitoba.

Common Spragueia - *Spragueia leo* (Gn - nw to Aweme, Manitoba. The larv feeds on Bindweed.

PANTHEINAE - Panthein Moths

These are medium-sized moths. The males have "feathered antennae." The eyes are usually hairy as they are also in the Hadenin Moths (Hadeninae). The larvae have dense tufts of hair and feed on trees.

Panthea species - near *Panthea acronyctoides* (Wlk.) - central Saskatchewan, n to La Ronge and Meadow Lake Provincial Park, also in Cypress Hills.

Pale Panthea - *P. pallescens* McD. - Loon Lake.

Yellowhorn - *Colocasia flavicornis* (Sm.) - Duck Mountain Provincial Park, Hudson Bay and Greenwater Provincial Park.

Close-banded Yellowhorn - *C. propinquilinea* (Grt.) - Bainbridge (n of Hudson Bay) and Fort Qu'Appelle.

The Laughter - *Charadra deridens* (Gn.) -Maryfield and Tantallon.

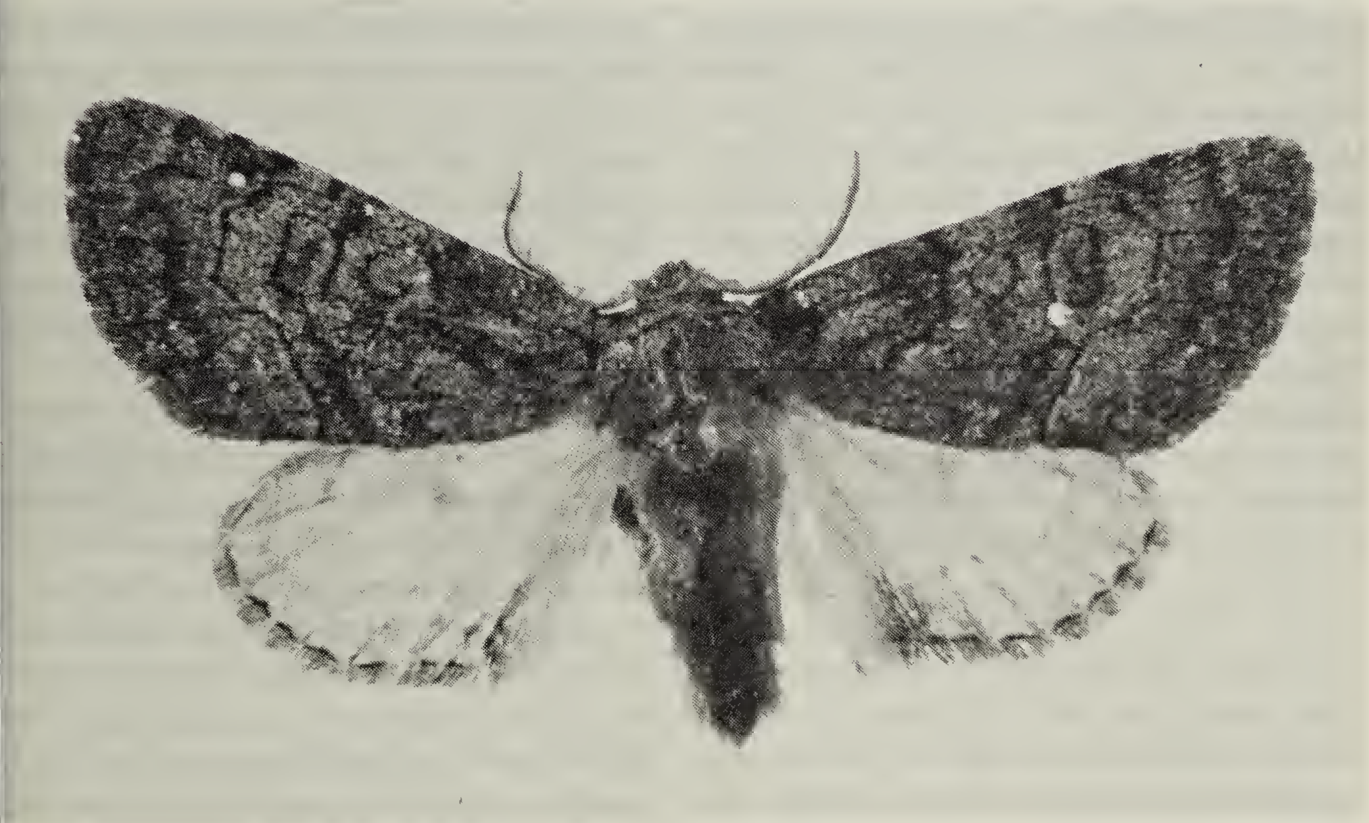
The Brother - *Raphia frater* Grt.- s Saskatchewan, n to La Ronge.

Expected Species:

Colorado Raphia - *R. coloradensis* Putnam-Cramer - n to Medicine Hat area of Alberta.

[1] BROWER, J.H. and A.E. BROWER 1970. Notes on the biology and distribution of moths associated with the pitcher plant in Maine. Proc. of Entomol. Soc. Ontario. Vol. 101:79-83.

[2] JONES, R.J.L. 1951. An annotated check list of the Macrolepidoptera of British Columbia. Occ. Paper Entomol. Soc. B.C., No. 1.



he Brother *Lorie Melit, S.M.N.H.*

EARLY SASKATCHEWAN BIRD BANDERS IN PERSPECTIVE

C. STUART HOUSTON, (Banding permit 00460), 863 University Drive, Saskatoo
Saskatchewan. S7N 0J8

On a recent visit to the central office for North American bird banding at the Patuxent Refuge, Laurel, Maryland, for a 3-day meeting on the future of North American bird banding, and a second visit to complete my historical studies, I couldn't help thinking back to the early history of banding, internationally, nationally and in our province.

Europe

The Romans anticipated later bird-marking practices. Gaius Plinius Caecilius Secundus (61-113 A.D.) told of a knight from Volterra who took captured swallows to Rome and painted them with his winning colors, so that his friends back home would know of his victory.[4]

There are some anecdotal references to early, single marking experiments in Europe. On 18 May 1647 a Grey Heron was captured by a falcon belonging to King Wladislaw IV of Poland; it was recaptured by another falcon on 19 July 1677, the first longevity information from banding.[4] In 1796, a Mr. Pleydell of Whatcombe House, Clenston Wood, Dorsetshire, England, caught a Woodcock alive in a rabbit net in February. He placed a ring of brass around its leg and then by chance shot the same bird in the very same coppice in December.[22] In 1804, Brugmann marked White Storks in Holland, but had no results from this.[4]

The "father of bird ringing" in Europe was Hans Christian Cornelius Mortensen, who taught at the Cathedral School, Viborg, Denmark. He placed his first two aluminum bands on starlings in 1890, but didn't begin banding in earnest until 1899 when he banded 165 starlings. Fro these he had two recoveries. By 1908 h had banded 263 storks and began t receive a great many recoveries.[16] [18] I 1903, a ringing station had been established by the German Ornithologica Society at Rossitten (Rybacij) on sandspit along the eastern shore of th Baltic Sea within what is now Lithuani 50 km north of Konigsberg, under th direction of Dr. J. Thienemann.[21]

North America

In North America, the application o silver wires attached to a brood of Easter Phoebe nestlings at Mill Grove Farm i eastern Pennsylvania by John Jame Audubon in 1803 has been widel quoted.[1] Audubon claimed that two of th phoebes returned the next summe Either Audubon had beginner's luck — o he couldn't tell whether one or tw phoebes had rings — or else he was a lia Since nestlings are subject to a 50% mortality rate in their first year and since i most species nestlings disperse rathe widely, it seems statistically improbable but possible, that two of four returned t their natal site. Next, John Beck sewed a piece of chamois around the tarsus of a Purple Martin in August 1812, and had i return the next year.[23]

North American banding began i earnest when Dr. Paul Bartsch bande 101 nestling Black-crowned Nigh Herons with an inscription, "Return t Smithsonian."[2] In 1904, Leon Jacob Cole of New Haven and P.A. Taverner, then a Michigan architect, popularized thei plan for a widespread network o banders. Taverner published in the Bulletin of the Michigan Ornithological Clu

1905,[19] but Cole did not get in print until 4 years later.[7] Taverner gave bands to friends around the United States willing to apply them. His bands had the inscription, "Notify the Auk, New York." Taverner's first recovery came from a tagged Yellow-shafted Flicker banded on 29 May 1905 by Charles Kirkpatrick in Keoka, Keokuk County, Iowa. It was shot at Many, Sabine Parish, Louisiana, on Christmas day that year.[20]

On 8 December 1909 the American Bird Banding Association was formed in New York City with Howard H. Cleaves as its secretary. Two years later, the Linnaean Society of New York took over the sponsorship of bird banding, under the direction of Cleaves (who 40 years later was on the Audubon Society lecture circuit to places as far-flung as Saskatchewan).[15] Bands were manufactured and distributed to a select group of ornithologists around the United States.

On 11 November 1919, at the annual meeting of the American Ornithologists' Union in New York City, S. Prentiss Baldwin of Cleveland presented a paper howing that information could be ob-ined through systematic trapping of dult birds. His paper stirred intense in-rest and from that point events moved credibly fast.

Only 15 days later, on 26 November, r. Edward W. Nelson, Chief of the nited States Biological Survey, wrote to e Linnaean Society, offering to take over e banding work. On 9 December, the nnaean Society accepted the offer. On March 1920, Frederick C. Lincoln ported to duty as chief of bird banding the Biological Survey in Washington, C.[15] Wouldn't it be great if governments day could respond as quickly to per-ived conservation needs?

The Bird Banding Laboratory was in full eration by 1921, recruiting volunteers ough continent-wide publicity. A small office was established in Ottawa to process Canadian permits and issue bands, but the central record-keeping has always been at the United States' headquarters. Soon banding, haphazard and inconsistent though the activities were, was one of the leading contributions to ornithological knowledge made by unpaid volunteers. The number of banders increased from 135 in 1921 (2845 birds were banded) to 490 in 1922 (6000 birds banded) to 851 in 1923 (25,000 birds) and 971 in 1924 (40,432 birds).[17] Saskatchewan, with five banders, was "coming on stream" and contributing its share of birds by 1923. By June 1931, nearly 1,400,000 birds had been banded in the United States and Canada.

Saskatchewan

I was fascinated to see how disproportionately Saskatchewan banders had monopolized the early band permit numbers. Saskatchewan people took an early interest in banding — but an artifact in the way the permit numbers were assigned retrospectively, after years of operation without such numbers, gives Saskatchewan a disproportionate monopoly on the low numbers, and makes our role appear more important than it really was.

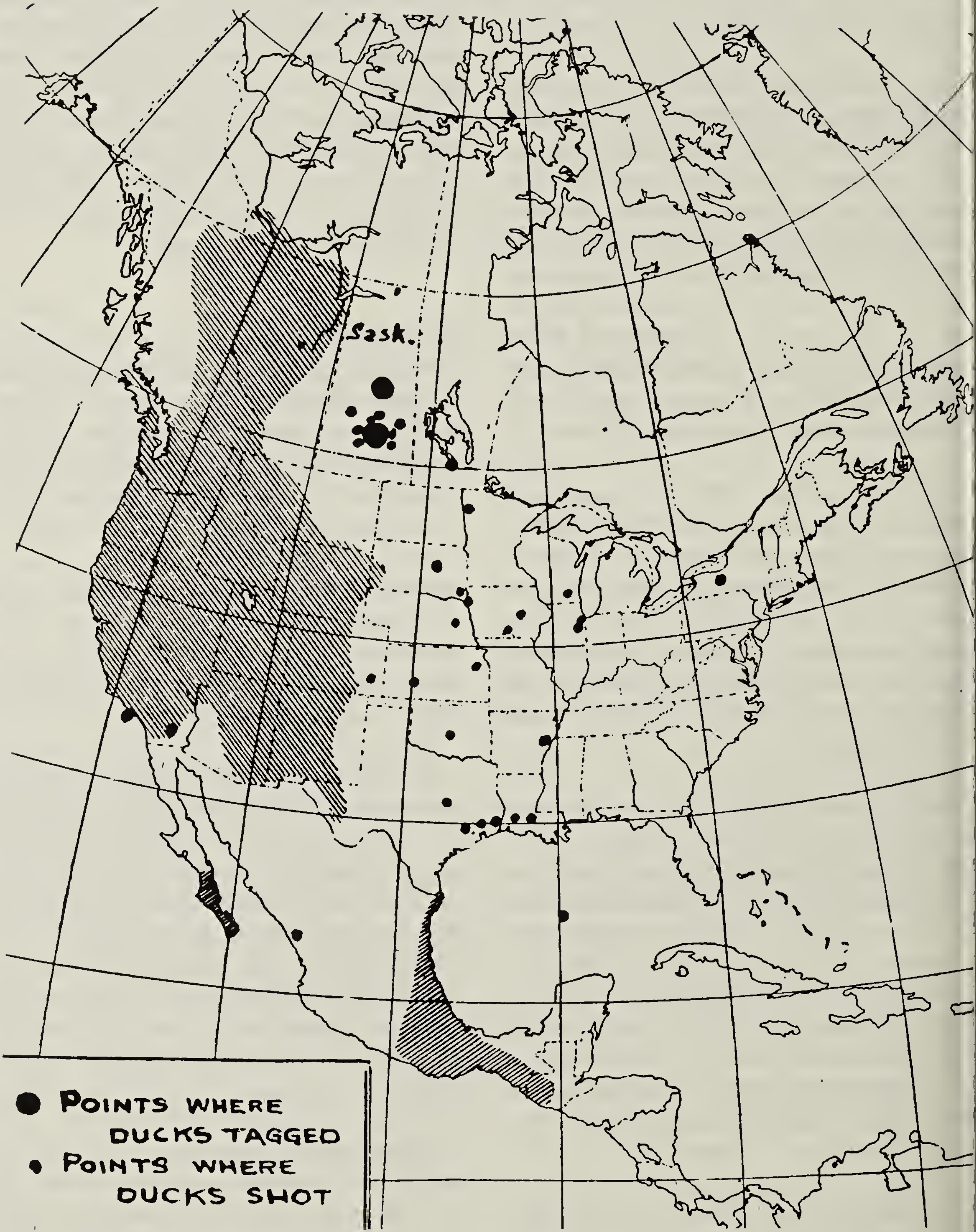
For several years permit numbers below 999 were reserved for Canadians only, but this was by no means consistently applied, since there were three Americans, banding within the United States, in the first 40 permit numbers and 188 in the first 500. Nor were Canadian numbers issued in a strictly chronological fashion. Instead they seem to have been assigned in a capricious or idiosyncratic fashion as is evident from the list below.

Saskatchewan residents received 4 of the first 10, 6 of the first 20, 9 of the first 30 and 11 of the first 40 permit numbers, over 25% in place of the 2% that would be predicted on the basis of sharing with

48 states and 9 other provinces at the time. These banders, their address, and the year they began banding were as follows:

002 Fred Bradshaw, Game Commissioner, Regina (1921)

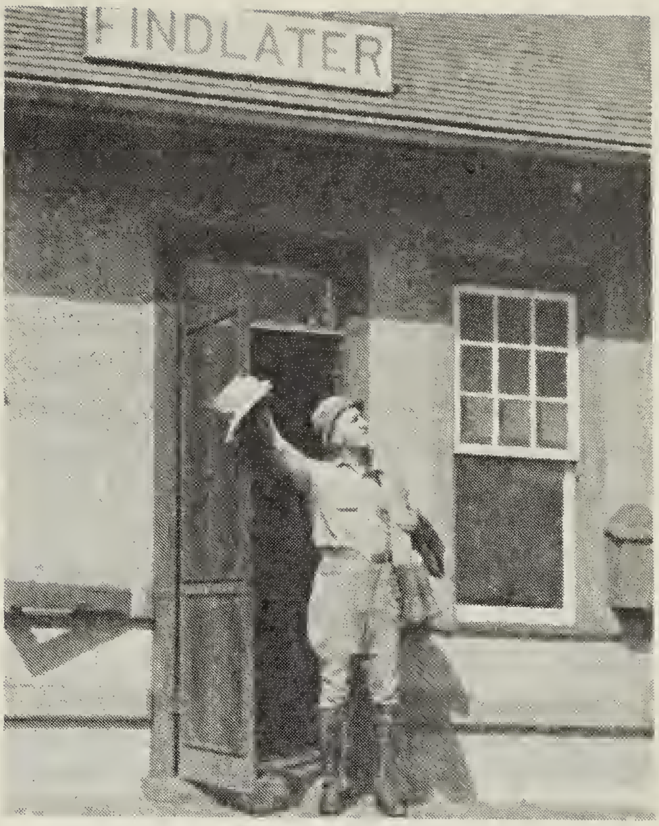
006 Edgar E. Baynton, Maple Creek and Belbutte (1928)



The first published recoveries of Saskatchewan bandingappeared in the Annua Report of the Chief Game Guardian

007 Harry L. Felt, Findlater (1922)
008 James C. Silver, Unity (1922)
014 Reuben Lloyd, Davidson (1923)[13]
016 John R. Carter, Muscow (1929)[12]
021 J.A.M. Patrick, Yorkton (1926)[11]
022 Philip Siemens, Hepburn (1929)
023 R.H. Carter, Muscow (1923)[10]
033 J.A. Briggs, Regina (1926)
034 John Dick, Jr., Elstow & Fairholme (1929)

For four of these banders, accounts have already been published.[11-14] Since I consider the history of banding to be one of the necessary foundation stones of a definitive *Birds of Saskatchewan*, scheduled to be published later in this decade, readers can look forward to a series of short papers telling of the activities of the early banders in our province.



Harry Felt, bird bander

The first publication of Saskatchewan banding results was in a place where few researchers would ever find it, in the Annual Report of the Chief Game Guardian. t mapped the direct recoveries in the first hunting season from 443 ducks,[3] banded with private non-government-issue bands by A.W. Martin near Findlater and Kinisino.[9] Beginning with the May 1924 issue of the *Canadian Field-Naturalist*, and continuing through the issue of March 1932, the Canadian National Parks Branch published 34 instalments of "The Official Canadian Record of Bird-bandng Returns."[5] This listed the initial ecoveries of Saskatchewan banders ogether with those from all other provines. Of special interest were the ecoveries from birds banded by Jack Miner with his private bands (each of which had a short verse of scripture, but o number). Miner was prevailed upon to ave these published in the issues of November and December 1927 and nuary 1928. Miner's recoveries inluded a Mallard shot at Humboldt and ducks" shot at Englefeld and Dubuc, askatchewan. The first published note written by a Saskatchewan bander was George Lang's account of how marauding crows and magpies destroyed his rookery of Black-crowned Night Herons south of Indian Head in June 1927.[14]

Band permit numbers are used on the individual "Certificate of Appreciation" awarded to each person who reports a bird band and on the computer printouts that summarize the results of banding. All "recoveries," including those from the beginning of banding, are on the big mainframe computer at the Patuxent Research Refuge of the United States Fish and Wildlife Service. Because of limited space on small bands, the mail address for reporting a band recovery is simply "Bird Band, Washington, D.C." On the smallest bands, such as those for wrens and chickadees, the address is on the inside of the band where few finders know to look for it. About 10,000 recoveries are reported each year from approximately one million birds banded in the United States and Canada each year, with a rate of 1% overall. However the rate is over 10% for waterfowl, 5% for colonial birds and raptors, and 0.1% or less for warblers. Such recoveries help to tell us where birds go and how long they live.

Acknowledgements:

I wish to thank my wife, Mary I. Houston, for several days of painstaking work alongside me in searching through old files and microfilms in the Bird Banding Office at Laurel, Maryland. John Tautin and his dedicated staff of 37 people placed all their facilities at our disposal and went out of their way to help.

[1] AUDUBON, J.J. 1834. Ornithological biography. Edinburgh: Adam & Charles Black. Volume 2, pp. 126-127.

[2] BARTSCH, P. 1904. Notes on the herons of the District of Columbia. *Smithsonian Miscellaneous Coll.* 45:104-111.

[3] BRADSHAW, F. 1922. Report of the chief game guardian. Regina: Saskatchewan Dept. of Agriculture, 17th Annual Report, pp. 329-382.

[4] BUB, H. and H. OELKE. 1989. The history of bird marking till the inception of scientific bird ringing. *The Ring* 12:141-163.

[5] CANADIAN NATIONAL PARKS SERVICE. 1924-1926. Official Canadian record of bird-banding returns. *Can. Field-Nat.* **38**:91-93, 133-135, 154-157, 177-179, 190-191; **39**:18-19, 39-40, 54-55, 82-83, 119-122, 169-171, 191-193, 206-209; **40**:62-64, 106-111, 158-164; **41**:66, 94-98, 141-144, 191-195; **42**:19-24, 107-110, 128-129, 151-161; **43**:42-46, 67-68, 86-91, 138-143, 192-196; **44**:72-76, 171-176; **45**:44-48, 150-154; **46**:70-74.

[6] CLEAVES, H.H. 1913. What the American Bird Banding Association has accomplished during 1912. *Auk* 30:248-261.

[7] COLE, L.J. 1909. The tagging of wild birds as a means of studying their movements. *Auk* 26:137-143.

[8] COLE, L.J. 1922. The early history of bird banding in America. *Wilson Bull.* 34:108-115.

[9] GOLLOP, J.B. 1961. A.W. Martin — early Saskatchewan bander. *Blue Ja* 19:118.

[10] HOUSTON, C.S. 1945. Saskatchewa bird banders: R.H. Carter, Jr., of Muscow *Blue Jay* 3:37.

[11] HOUSTON, C.S. 1967. Saskatchewa bird banders: Judge J.A.M. Patrick.*Blu* *Jay* 25:172-174.

[12] HOUSTON, C.S. 1968. Saskatchewa bird banders: John R. Carter of Muscow *Blue Jay* 26:118.

[13] HOUSTON, C.S. 1969. Saskatchewa bird banders: Reuben and A.C. Lloyd o Davidson. *Blue Jay* 24:27.

[14] LANG. G. 1927.Marauding crows an magpies. *Wilson Bull.* 39:243.

[15] LINCOLN, F.C. 1921. The history and purposes of bird banding. *Auk* 38:217-228.

[16] LINCOLN, F.C. 1922. Hans Christian Cornelius Mortensen. *Auk* 39:592.

[17] LINCOLN, F.C. 1928. A bibliography o bird banding in America. *Auk* 45:suppl., 1-73.

[18] MORTENSON, H.C.C. 1950. Studies in bird migration, being the collected papers of H. Chr. C. Mortensen, 1856-1921. Copenhagen: Munksgaard. 272 pp.

[19] TAVERNER, P.A. 1904. The tagging of birds. *Bull. Michigan Ornithological Club* 5:50-51.

[20] TAVERNER, P.A. 1906. A tagged flicker. *Wilson Bull.* 18:21-22.

[21] THIENEMANN, J. 1905. Bericht uber den vogelzugversuch. *Journal fur Ornithologie* 392-399.

[22] TUFTS, R.W. 1927. Bird banding in 1798. *Can. Field-Nat.* 41:17-18.

[23] WOOD, J.B. 1953. John Beck the second American bird-bander. *Bird Banding* 24:67.

SASKATCHEWAN BIRD BANDERS: FRED BRADSHAW AND PROTEGES*

C. STUART HOUSTON, (Banding permit 00460), 863 University Drive, Saskatoon, Saskatchewan. S7N 0J8

In the bird banding files at Patuxent Refuge, Laurel, Maryland, Fred Bradshaw is listed as the holder of Banding Permit Number 002. In truth, Bradshaw acted more as a facilitator who encouraged and "farmed out" bands to others in the early days. Under his "umbrella" were A.F. Wolther of Morse, James Silver of Unity (who obtained permit 008 in his own right), Fred G. Bard with permit 151 and A.E. Etter, who obtained permit 181.

Fred Bradshaw, after having served as he Chief Game Commissioner for Saskatchewan, became the first Director of the Provincial Museum, Regina, in 1928.[5]

A.F. Wolther

Band 100553, "issued by the Saskatchewan Game Department" and applied by A.F. Wolther, resulted in 1921 in he earliest recovery from a Saskatchewan-banded bird, using official Biological Survey bands.

Bradshaw's annual report is worth quoting: "Another item of interest is that f a young pelican that was captured by Mr. A.F. Wolther of Morse. This bird appeared to be in good health but apparent- very tired, and settled down on the dam ear to the Canadian Pacific Railway at at point. Mr. Wolther coaxed the bird to t out of his hand and it allowed him to ke it home. He fed it fish and raw meat d evidently it fared quite well on these tions. A tag furnished by the department as attached to the leg of the pelican and r. Wolther gave the bird its freedom, but was reluctant to leave, and would merely fly over to the dam and return to his barn every night. However, on October 22nd he notified the department that the bird had at last made up its mind to go south, and on November 9th, he advised us that the pelican had been recaptured by Mr. F.L. Norman, of Lindsay, South Dakota, who again released it after attaching an additional band bearing the address of the second captor."[1]

This record for 100553 was quoted by Frederick C. Lincoln in 1939, as one of the three most interesting pelican recoveries in the banding files. He stated that it had been banded on 22 October 1921 and was "shot" 5 days later, on 27 October 1921, at Lindsay, South Dakota.[4] A third version of the story gives the date of departure as 30 October and the date of arrival at "Cheyenne River, South Dakota" as 1 November.[2] Perhaps because of this confusion, or because it was such an early record, this recovery is not on the computer printout of recoveries from Saskatchewan banding.

On the other hand, there is a Double-crested Cormorant recovery on the computer printout: 100573. Banded at Last Mountain Lake on an unknown date and year, but possibly 1922. It was shot on 27 April 1930 in Minnesota, 44° 10′ North and 93° 20′ West, near Faribault, Minnesota. When I enquired years ago as to the identity of bander 002, I was told it was "A.F. Wolther for Fred Bradshaw," but it is more probable that Wolther was involved in banding the White Pelican only.

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umber 16 in a series of biographies of Saskatchewan bird banders

James Silver, Unity, permit 008

James Silver, believed to have been a farmer near Unity, banded a few ducks in 1922, under permit 008, though there is a notation "under the direction of Fred Bradshaw, Regina." He may have been a relative of either Fred Sterling Silver or Oliver James Silver, both of whom homesteaded near Unity, Saskatchewan. (It is virtually certain that he was NOT the James Silver in the extant bird banding files, the James C. Silver who worked for the Biological Survey in Washington, D.C., and banded Common Terns on Cobb's Island, Virginia, in 1936).

Silver caught and banded three flightless young Gadwalls, one pintail, one Blue-winged Teal and one Canvasback near Unity on 15 August 1922.

The pintail was shot at Killsquaw Lake, 3 miles east of where it was banded, on 23 September. All three Gadwall were shot that year: one on 23 September at Killsquaw Lake; one on 16 November in Pabo Duro Canyon, Randall County, Texas; and one on 27 November in Crittenden County, Arkansas.

Banding at Old Wives Lake in 1928

A letter of 17 January 1929 from J.B. Harkin, Commissioner, Canadian National Parks, to Paul Redington, the new Chief, Bureau of Biological Survey, Washington, has the following postscript: "Mr. Bradshaw reports that he also banded a few Cormorants, Great Blue Herons & Pelicans at Lake Johnston, but regrets that he has misplaced his records for these birds."

Bradshaw thereby committed the ultimate sin that a bander may perpetrate, and any recoveries from these birds could be entered, but would sit in a "limbo" file forever.

Lucky Lake botulism outbreak

There was an outbreak of botulism at Luck Lake in late July 1928. An incredibly high proportion, three of the four treated pintails, banded under Bradshaw's permit on 28 July, were shot by hunters as follows:

208412, on 1 November 1928, northwest of Dodge City, Kansas
208413, on 14 January 1929, at Los Banos, California
208417, on 6 November 1928, at Midlothian, Texas.

A Mallard, similarly treated on the same day, was shot on 17 October 1928, 4 miles south of Regina, Saskatchewan.

A.E. Etter, permit 181

A.E. Etter was Saskatchewan's Game Commissioner for several years in the 1930s.

In 1932, he banded two Mallards at Craven and J.A. Innes (or J.A. Simes?) banded 12 Mallards and 4 Canvasbacks on 27 August at Senlac, Saskatchewan.

Gilbert Stratton, Box 988, Weyburn, Saskatchewan, sent the following report direct to the Biological Survey in Washington:

"Last winter I caught a wild duck and kept it through the winter. Mr. Armit, a local business man, got a bird band for me from Mr. A.E. Etter, with instructions to notify you when the bird was freed.
Band number: illegible
Sex: Male
Species: Mallard
Banded at: Weyburn
Liberated: May 24th, 1932 near the Souris River."

There is a notation at the bottom of this letter that the band had been issued to Fred Bradshaw. Computer entries show this to be the only duck banded under permit 002 in 1932.

Nicholas Albulet, permit 5537

Nick Albulet was in the employ of the Saskatchewan Museum of Natural History for several years in the 1930s. He had a permit of his own from 1934 through 1936. Of 27 birds banded at Regina, 26 were Western Meadowlarks, 13 each in 1934 and 1936. He also banded one Sora on 23 May 1934. No recoveries resulted from his banding.

Fred G. Bard, permit 151 [also 3982 and 4345]

Under Bradshaw's permit, one shoveler was banded in Regina in July 1928 and two Mallards were banded at the Quill Lakes in July 1928.

Extant banding schedules at Patuxent from Bradshaw himself involve only 26 non-game birds, all from 1929, and these appear to be in the handwriting of Fred Bard, Bradshaw's young assistant. Four were Slate-colored Juncos banded at Dafoe, Saskatchewan, in late April, by Bard, using bands issued to Bradshaw. At the Quill Lakes he banded 13 White Pelicans on 15 June and 17 Ring-billed Gulls and 5 Common Terns on 11 July. Seven immature Mallards were banded at the Quill Lakes; one of these, banded on 10 June 1929, was shot on 1 October 1929 at Guernsey, Saskatchewan. There were also four Willets banded at Last Mountain Lake, one on 30 June and 3 on 11 July.

Fred G. Bard also had banded six birds in 1928 and four in 1929 under his own permit 151; this was the forerunner of a large-scale project that involved banding 13,363 individual birds.[3]

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[1] BRADSHAW, F. 1922. Report of the Chief Game Guardian. Regina: 17th Annual Report of the Department of Agriculture, pp. 329-382.

[2] CANADIAN NATIONAL PARKS BRANCH. 1924. Official Canadian record of bird-banding returns. *Can. Field-Nat.* 28:91-93.

[3] HOUSTON, C.S. 1970. Saskatchewan bird banders: Fred G. Bard. *Blue Jay* 28:150-156.

[4] LINCOLN, F.C. 1939. The Migration of American Birds. New York: Doubleday, Doran, p. 113.

[5] SYMONS, R.D. 1966. Personal recollections of some early Saskatchewan naturalists. *Blue Jay* 24:2-6.

lightless young are often banded; young Double-crested Cormorants at Perry's Point colony, Last Mountain Lake, 1969

Gary Anweiler

BROMHEAD RARE BIRD RECORDS

CAROL F. BJORKLUND, 3634 McCallum Avenue, Regina, Saskatchewan. S4S 0S5

The following records are all those of the author unless specified in the text. If not otherwise noted, the observations took place in the farmyard of Lorne and Carol Bjorklund, 2 miles north of Bromhead, Saskatchewan, at SW15-3-13-W2nd.

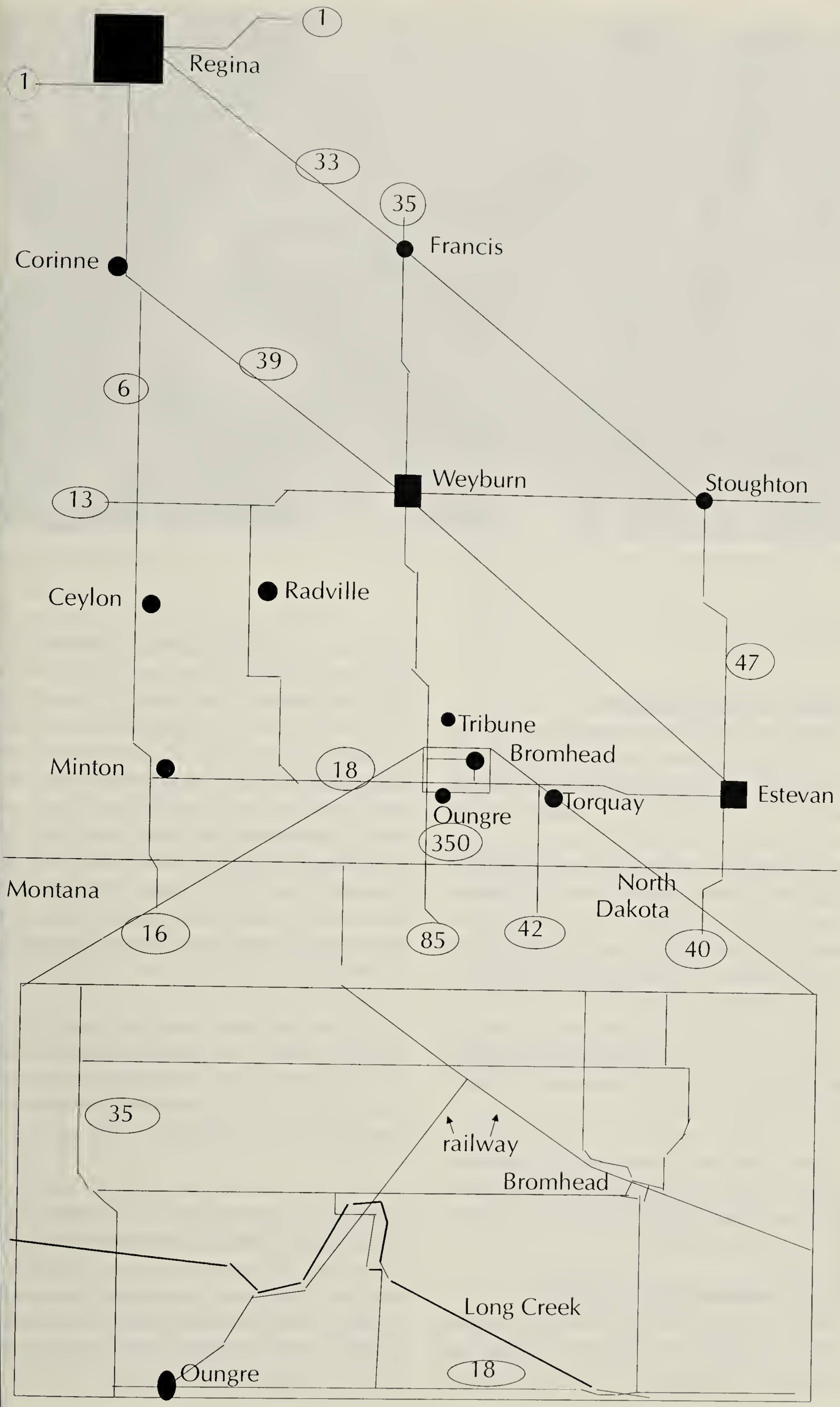
Bromhead is situated in the extreme south of the province about 13 miles north of the Saskatchewan - North Dakota boundary and just a few miles from the eastern edge of the Missouri Coteau. The land is flat and open, intensively cultivated, with most sloughs drained and ploughed. Farm shelterbelts offer most of the habitat suitable for birds. Long Creek runs about 2 miles south of Bromhead and is thought to be the corridor for movement of some of the birds in this area.

CINNAMON TEAL

A pair of Cinnamon Teal was first seen on 30 May 1979 in a water-filled ditch adjoining a marshy slough a half mile east of Bromhead. The pair was observed twice daily, morning and afternoon. Observations were facilitated since the site was directly beside a railroad track adjacent to the road. The teal became accustomed to the traffic and did not flush. Observations ceased at the end of June. Nesting was not confirmed.

The Cinnamon Teal is fairly common in extreme southwestern Saskatchewan and wide-ranging to Kindersley, Saskatoon, Last Mountain Lake and Moose Jaw. There are two breeding records for the province, a "pair evidently breeding" 17 mi. southwest of Moose Jaw in 1923 and a "male, possibly paired" seen at Last Mountain Lake Wildlife Management

The farmyard of Lorne and Carol Bjorklund in 1976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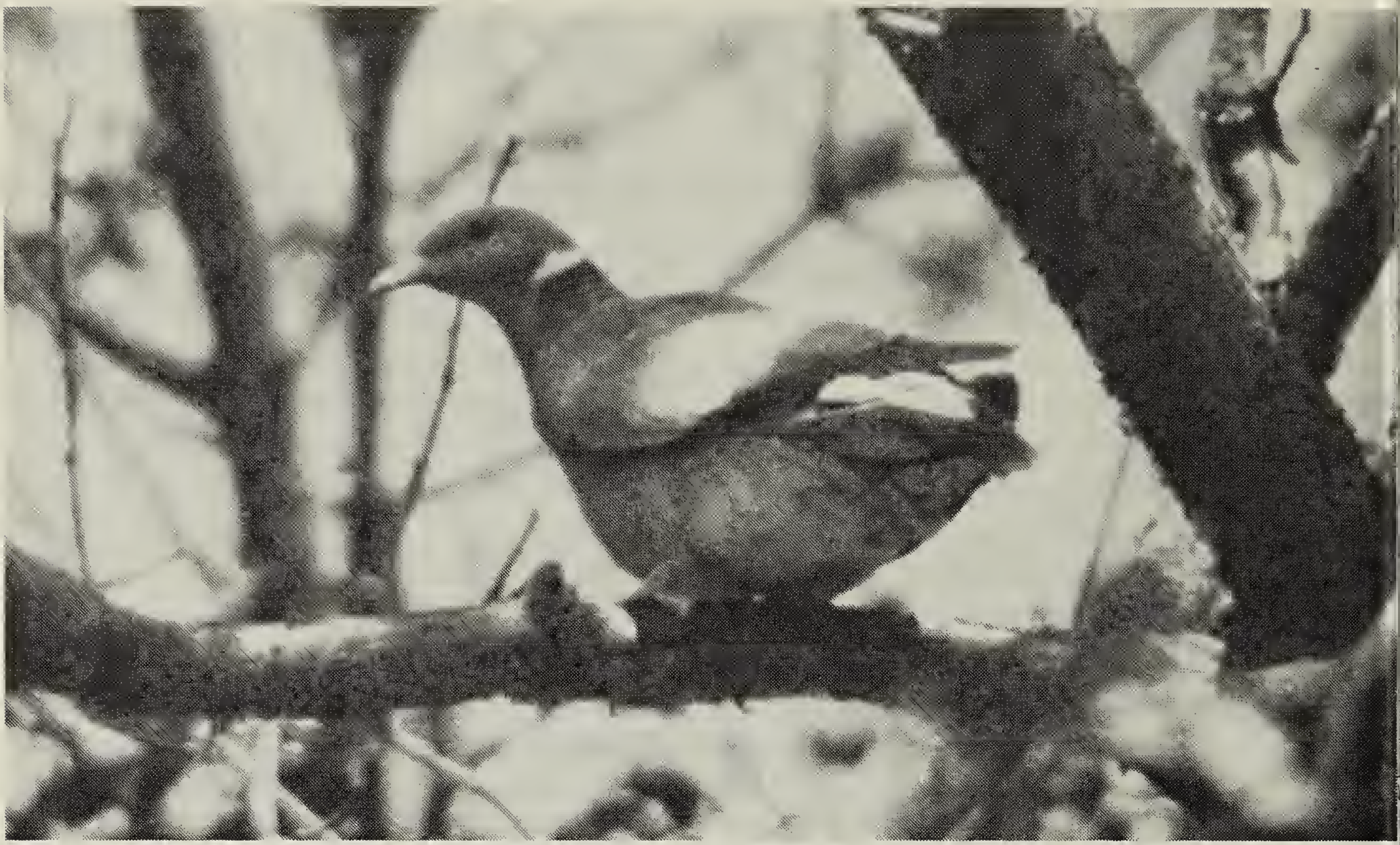


Band-tailed Pigeon at the Vernon Bjorklund farm *Vernon Bjorklund*

Unit by Wayne Harris from 4-27 May 1983.[10 9]

BAND-TAILED PIGEON

On 3 July 1984, a strange pigeon flew by Vernon Bjorklund as he worked in his farmyard north of Bromhead. The pigeon landed in an apple tree nearby and he observed it briefly before taking photographs of the bird. The bird remained in the yard only a short time and was not seen again. The photographs show the identifying marks of the Band-tailed Pigeon: yellow bill tipped with black, yellow legs and feet, narrow white band on the back of the neck and the broadly banded tail. This is the first documented record of the Band-tailed Pigeon for Saskatchewan.

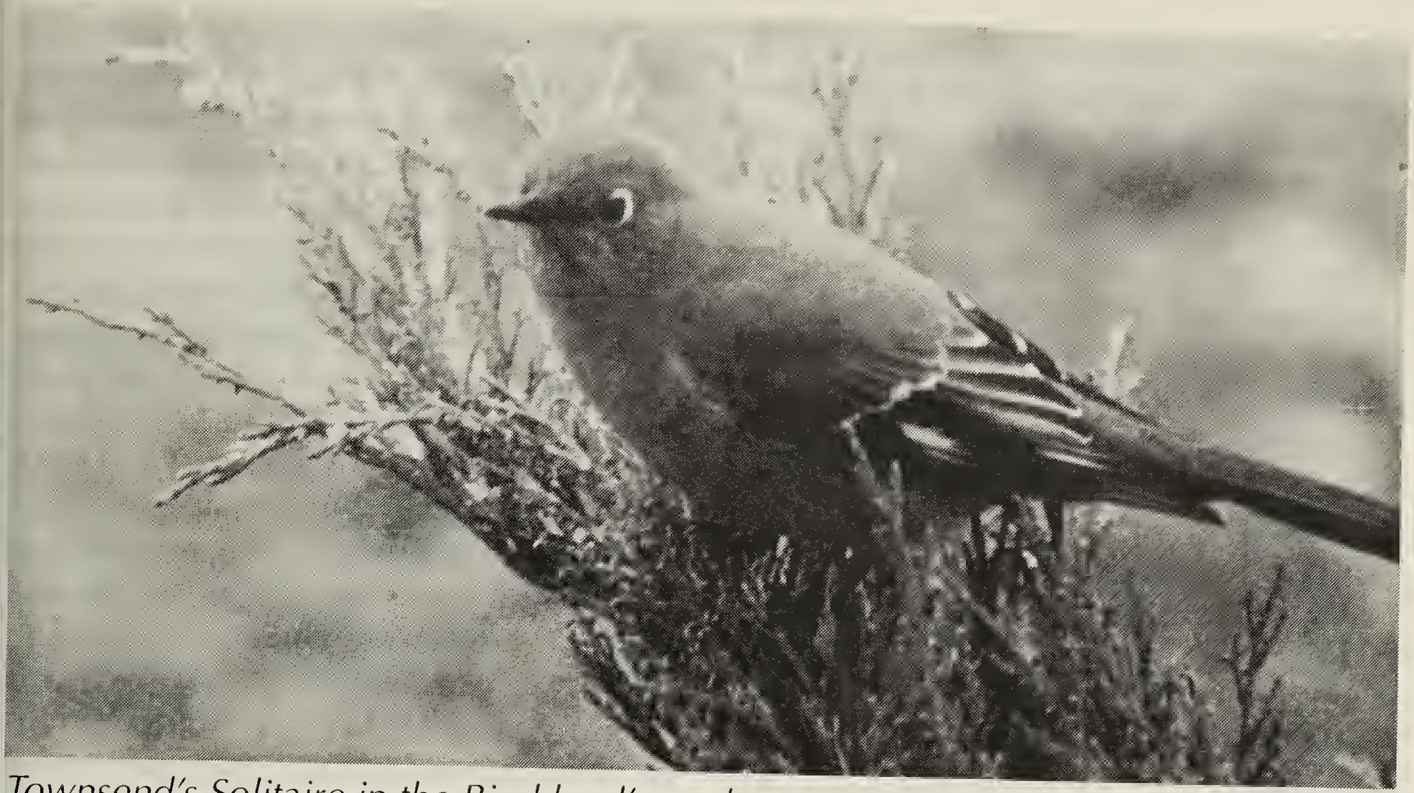
There are nine other records for Saskatchewan, including another documented sighting from Weyburn 24 August to 5 September 1984.[1]

YELLOW-BILLED CUCKOO

This species was first seen 15 August 1982, although its raucous croaks had been heard previously during the summer. The bird was perched quietly on an open branch 30 feet away. It had a light eye ring and a bi-coloured bill — the upper mandible dark, and the lower yellow. There were reddish-brown patches in the wings; the undertail pattern of black and white showed much more contrast than that of the Black-billed Cuckoos which nested in the yard. After this bird had been identified as a Yellow-billed Cuckoo, Peterson's Field Guide to Bird Songs was used to confirm the identity of the songs that had been heard through the summer.

On at least two other occasions that summer, two of these cuckoos were seen flying together. It is not known if nesting took place. A Yellow-billed Cuckoo was heard on 12 June 1983.

There is one record of this species from Estevan, 8 June 1974, by T.M. Beveridge. One unpublished record exists from the Cypress Hills area where, in 1979, Wayne Harris heard and saw this species at the Wilkes Parsonage ranch on Battle Creek. (pers. comm.) Paul Chytyk heard a Yellow-billed Cuckoo sing briefly at



Townsend's Solitaire in the Bjorklund's yard *Carol Bjorklund*

Roche Percee Regional Park, 22 July 1988 (pers. comm.).

TOWNSEND'S SOLITAIRE

There are two records of Townsend's Solitaire at Bromhead. Photographs were taken of one of the birds (see figure).

In late afternoon, 11 April 1983, a Townsend's Solitaire appeared in the yard nd fed on the berries of the juniper under he house window. It was gray all over, ith yellow-brown patches in the wings nd a bit of white edging on some wing eathers. The tail was long, with white uter feathers noticeable in flight. There as a white eye ring. The bird hunted by itting in a tree until spotting prey, upon hich it flew down, caught and ate the em and then returned to the tree. Two hotos were taken when the bird returned the juniper near dusk. It was not seen ain.

The second record is from the fall of 84 when another solitaire came on 22 ptember and was seen almost every y until 19 October. This bird was very nwary and followed us around the yard, metimes coming from a hidden place have a look at Lorne as he worked outside. The bird spent a considerable amount of time sitting on the south porch, presumably to take advantage of the heat emanating from the house and the reflected sunshine from the wall. It ate cotoneaster berries and juniper berries. Not many insects could have been available since the weather was very cool, but the solitaire ate those it could find.

Townsend's Solitaire is a rare, erratic wanderer in southern Saskatchewan, mostly in spring, fall and winter. There is one breeding record from the Cypress Hills, where a territorial pair and one non-flying fledgling were found in July 1979 by Wayne Harris (pers. comm.).

SAGE THRASHER

On the morning of 21 June 1985, a Sage Thrasher was observed for at least 10 minutes as it ran quickly about on the driveway by the house, feeding on insects. Its general shape was long and slim, with a long, thin, slightly decurved bill. The bill and legs were dark; wing bars were not noticed. Upperparts were dull grayish. Underparts were heavily streaked with dark brown on an off-white background. The tail was long, with whitish spots on the terminal underside.

The bird was seen again at 7:30 p.m. when it was running around in the grass in the barnyard, eating insects. No photographs were taken.

The Sage Thrasher is irregular to rare in southwestern Saskatchewan and occasionally breeds there. There are two other records outside the southwest of the province: 23 June 1963, one bird at Porter Lake;in June 1986, a singing male in the Big Muddy.[6 7]

FIELD SPARROW

Field Sparrows were recorded several times in our yard, 2 mi. n of Bromhead. There are photographs from September 1980 and 8 September 1984.

A journal entry for 7 September 1985 contains a description of three Field Sparrows feeding beside the house: reddish-brown crown, pink bill, gray face, plain breast and underparts grayish-white, streaked upperparts but plain rump, notched tail with lighter-coloured edges, two white wingbars, sides slightly buffy, legs pink, white eye ring. These birds were very skittish and preferred to feed under or around bushes or in the longer grass. Two Field Sparrows were seen the next day and two on 9 September. There are six other records of the Field Sparrow in Saskatchewan, two of which are in the southeast, one in Weyburn[8] and one at Estevan (A.R. Smith, unpubl. data).

GREAT-TAILED GRACKLE

This species was not separate from the Boat-tailed Grackle at the time it was seen in 1979; however, based on my observations and later comparison of descriptions of the "split" species, it is assumed the species that I saw was the Great-tailed Grackle. Great-tailed Grackles can be differentiated from Boat-tailed Grackles by the former's flat rather than rounded crown, bright yellow eyes as distinguished from the brown or dull yellowish eyes of the Boat-tailed Grackle, and by the longer and broader tail.

The Common Grackle is a common breeding bird of this area. Although size is relative, the difference between Common and Great-tailed grackles is so great, 18 in. for a male Great-tailed as compared to approximately 12 in. for a male Common, that it was obvious at once that the bird was different. There are differences in color between the two species as well. In the male Common Grackle the bluish-purple gloss of the head and neck is abruptly cut off from the iridescence of the rest of the plumage. In the male Great-tailed Grackle the purplish gloss includes the head, neck, back and underparts. The tail of a the Great-tailed is relatively much longer than the tail of the Common Grackle. Eyes of both species are yellow but those of the Common Grackle are a paler yellow. Female Common Grackles are smaller and duller in color than males. The female Great-tailed Grackles are also smaller than the males but entirely different in color, being plumaged in shades of brown.

At 1:00 p.m. 14 May 1979, one male Great-tailed Grackle landed on the drive directly in front of the house and was observed carefully at close quarters for about a half hour. The bird was as long as a crow but much slimmer, with a flattish crown and yellow eyes. It was black all over, with iridescence on the head and body. Its tail was V-shaped and extremely long, dragging on the ground as the bird walked, and blowing in the wind. The grackle gave many different kinds of loud calls: squeaky, hoarse, vibrating and gurgling, short, high-pitched squeaks, loud clicks. The presence of this loud and bossy bird resulted in an uproar amongst all the other birds of the yard. After a time, the grackle flew to a spruce and examined an old crow's nest. Another Great-tailed Grackle joined it there. The two then left.

At the same time, a group of 5 or 6 Great-tailed Grackles was seen in Bromhead, 2 mi. south of our farm. They stayed for nearly a week and were seen by other observers besides Lorne and Carol Bjorklund. Though initially people in Bromhead were pleased to see these new birds, the grackles quickly wore out their welcome because of their habit of harrassing and terrifying the resident bird population. After these few days, the grackles disappeared as mysteriously as they had come.

There are no other records for this species in Saskatchewan. For Canada, there is one other record, that of a female photographed at Cape St. James, Queen Charlotte Islands in May 1979.[5] There are two Canadian sight records of the Boat-tailed Grackle, single birds on Sable Island, 7 May 1968 and at Glace Bay, 5 August 1969.[5]

ORCHARD ORIOLE

This species was first noted in our area in May of 1977 when a singing first-year male was observed in a farmyard west of Bromhead. The next record was 20 June 1979, again a singing first-year male, this time at a farm near Colgate. In 1980 two first-year males inhabited our own yard and proved themselves prodigious singers, as well as good scrappers in territorial disputes. The next year we noted one adult male. From these beginnings, the Orchard Oriole has spread so that almost every shelterbelt in the area hosts them. Our farmyard supported three pairs at their peak population, but numbers were drastically reduced, and those on some farms disappeared, during the summers of heavy spraying for grasshoppers.

Most other records of the Orchard Oriole in Saskatchewan have occurred since 1980, the species being now well established, having first bred in the extreme southeast of the province and gradually dispersed west and north.

Records previous to 1980 include a first-year male at Regina in June 1972, a family group at Ft. Qu'Appelle in June and July of 1974, an adult male near Tantallon 8 June 1976, and a sighting at Indian Head on the same day in 1976.[4] There was also a sighting in May 1979 at Regina of a first-year male.[2]

ROSY FINCH

Two Gray-crowned Rosy Finches were photographed by Lorne Bjorklund in the yard on 4 November 1983. They were seen for a short time only on that day. In the photographs, the black forehead, gray back of head, brown upper back and rosy brown of the lower body can all be seen.

Though this species is seen regularly in southwestern Saskatchewan, no other records were found for the southeast of the province.

[1] ADAM, C.I.G. and R. KREBA 1985. First documented record of the Band-tailed Pigeon in Saskatchewan. *Blue Jay* 43:40-41.

[2] BELCHER, M. 1980. Birds of Regina. SNHS Special Publ. #12. 151 pp.

[3] BEVERIDGE, T.M. 1974. Northern Great Plains region. *Am. Birds* 28(5):917.

[4] CALLIN, E.M. 1980. Birds of the Qu'-Appelle. SNHS Special Publ. #13. 168 pp.

[5] GODFREY, W.E. 1986. The Birds of Canada, revised ed. Natl. Mus. of Natural Sciences, Ottawa. 595 pp.

[6] GOLLOP, J.B. and M.A. GOLLOP 1963. Some 1963 bird records for the Saskatoon district. *Blue Jay* 22:9.

[7] GOLLOP, J.B. 1986. Prairie Provinces region. *Am. Birds* 40:1218-1219.

[8] GOLLOP, J.B. 1988. Prairie Provinces region. *Am. Birds* 42:1304-1305.

[9] HARRIS, W.C. 1983. Prairie Provinces region. *Am. Birds* 37(5):883.

[10] MITCHELL, H.H. 1924. Birds of Saskatchewan. *Can. Field-Nat.* 38:101-118.

WHERE WERE BRADSHAW'S 900 WESTERN GREBE NESTS?

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Fred Bradshaw published in the *Oologist* in 1929, the following short note titled "From Saskatchewan:"

"Last year [1928] [I] found what to me was an unusual colony of Western Grebes. Ninety-five per cent of nests were in open water. This year [1929] I visited the same spot and the lake is much lower. The old nests are all on dry land now and by actual count there were over 900 nests. These Grebes apparently are late breeders for the birds were in the water around the old site on June 5th and apparently had not yet started to build their nests. Last year [1928] on July 4th I waded through the nests and found only one young bird. I thought perhaps the first nests had been destroyed, but am now inclined to the opinion they are late breeders. The solid gray down of the young with reddish patch on the crown combine to make it a lovable looking chick."[1]

The location of such a large colony seemed of importance, especially with the early evidence of dry-land nesting, so I looked up the Museum annual reports for 1928 and 1929, seeking clues. The 1928 collecting party was at Rush Lake, but listed only three grebe species, the Pied-billed, Eared and Horned, among 88 species of birds noted. The 1929 camp was near Val Marie and included only Horned and Eared Grebes among 75 bird species. I therefore wrote to the late Fred G. Bard on 10 May 1982 to ask whether he could help in the location of the 900-nest colony. Bard's undated reply to my query was as follows:

"I am inclined to think the Western Grebes were at Isle of Bays on Old Wives Lake as Bradshaw visited Hugh McCrae a keen birder, fairly often." Bradshaw tha year must have visited the Isle of Bay (1.75 mi. long,[4] and 4 mi. out in the lak from McCrae's ranch) without McCrae. I 1982 Hugh McCrae, retired in Saskatoo and a regular attender of Saskatoo Natural History Society meetings, had n recollection of visiting such a large congregation of grebes.

McCrae told me that H. Hedle Mitchell of the Provincial Museum i Regina had once spent a month at hi ranch on SW 6-14-28-W2nd, on the eastern shore of Old Wives Lake, 6 mi. wes and 2 mi. north of the hamlet o Crestwynd. Fred Bradshaw, Game Commissioner and later Museum Directo often came for a weekend, and onc drove around Old Wives Lake by car, difficult journey, using available road and back trails. Other naturalist visitors t the McCrae ranch included collecto Cyril Guy Harrold in May 1922, Nei Gilmour of Moose Jaw, and Ashley Hin of the Field Museum of Natural History Chicago, in 1925.

McCrae's father, Thomas, had taken Mr. Flickinger, photographer with the For Film Company, to the Isle of Bays in 1919 to make a movie entitled "Bird City," bu the main bird colony on the island wa then the American White Pelican. On another occasion Thomas McCrae had taken Fred Bradshaw, then Game Commissioner, to the island. Hugh himself had visited the island in 1920 with the Banf photographer, Byron Harmon.

Hugh McCrae had a scientific collecting permit so that he could collect unusual species, such as Dickcissel, for the museum, from about 1925 to 1940, when he left the ranch for a position as assessor with the Department of Municipal Affairs. He retired in 1968 and regularly attended the meetings of the Saskatoon Natural History Society. He died on 21 August 1986.

Fortunately, there are definite numbers for the Western Grebe colony on the Isle of Bays for 4 other years: 300 pairs in 1928,[2] 64 nests in 1953,[4] 48 nests in 1956, and 250 nests in 1957. In the latter 2 years they again nested on dry land.[3 4 5] The 900 nests in 1929 reported by Bradshaw clearly are an all-time record number for dry-land nests of the Western Grebe anywhere.

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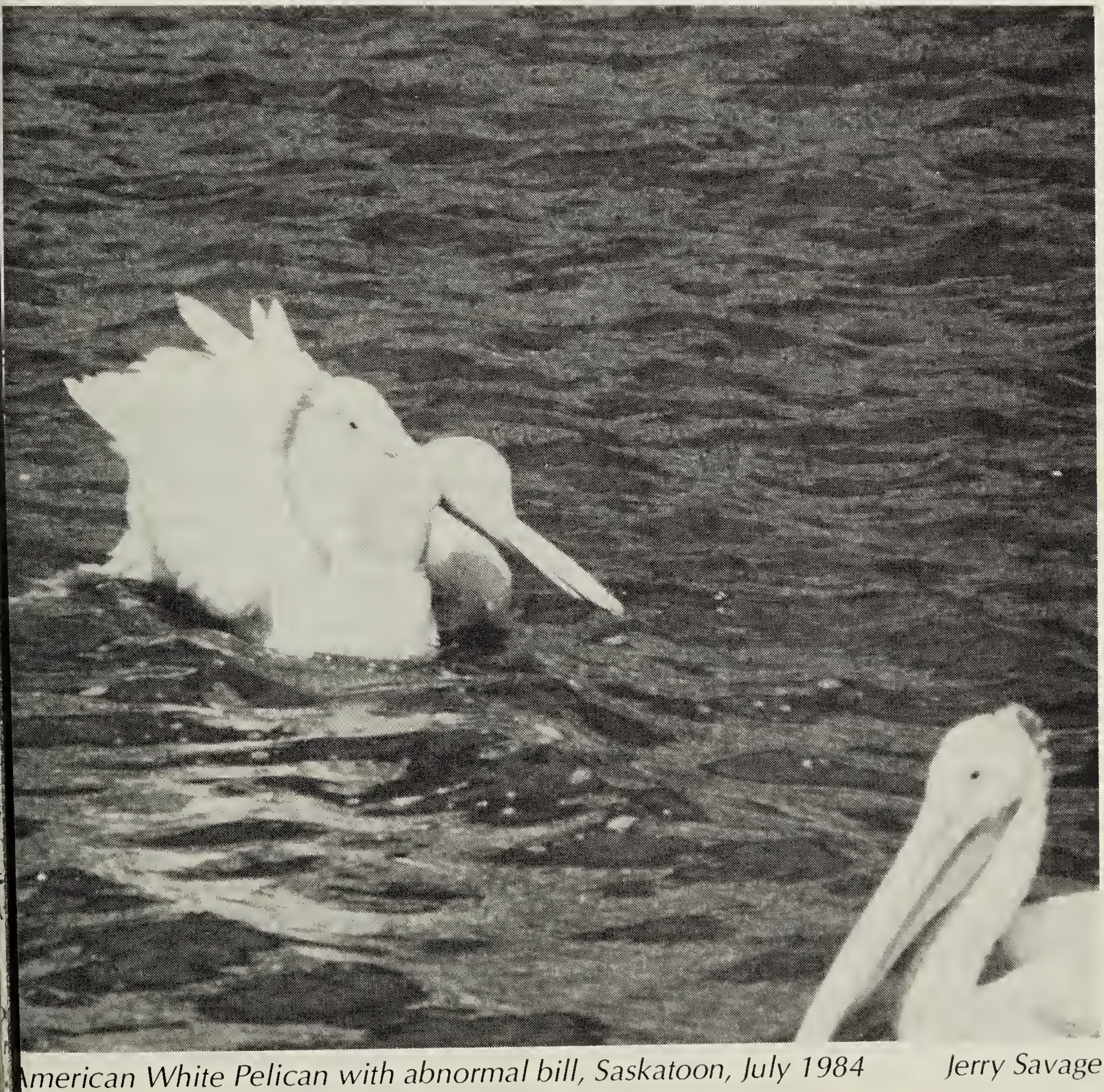
[1] BRADSHAW, F. 1929. From Saskatchewan. *Oologist* 46:93-94.

[2] KNIGHT, L.M. 1967. Birds of the Moose Jaw Area. Moose Jaw: Moose Jaw Natural History Society. 73 pp.

[3] LAHRMAN, F.W. 1957. Birds of the Isle of Bays, 1957. *Blue Jay* 15:106-112.

[4] NERO, R.W. 1958. Dry-land nest-site of a Western Grebe colony. *Auk* 75:347-349.

[5] NERO, R.W. 1959. Western Grebe colony. *Natural History* 68:291-294.



American White Pelican with abnormal bill, Saskatoon, July 1984 — *Jerry Savage*

SASKATCHEWAN'S FIRST GARGANEY OBSERVATIONS

STUART S. DECHKA, 2873 Athol Street, Regina, Saskatchewan. S4S 1Y3

The following passages were excerpted from my field records for 11 May 1990: "Garganey: One male seen at 50′ to 80 yds. For ~10 min. on flooded field to southwest of road that runs south from "Spruce Farm" on Highway 99 in Qu'Appelle R. Valley. First seen with 7 x 35 binocs at 50′ at ~12:45 (Forgot to bring my watch today!)–with 4 other ducks & several dowicher [sic] sp. & Am. Avocets (2). Three ducks took off after a moment, these were all B.W. Teal. The duck that already had my attention was about the same size & shape as these teal, it had prominent, wide, white eyebrows on each side of its brownish head. It had many long pointed feathers over its back that gave it a somewhat white-lined appearance there. Otherwise a basically non-descriptly patterned brownish/greyish duck. It swam towards the west with a female duck that was much the same in shape but otherwise I noted nothing else to distinguish it (by this time they were much farther away & scope lense was catching light on objective lense. After consulting Audubon Master, I initiated phone circle.

When I returned from phoning, the bird was no longer in sight and I wrote out the notes above. The bird was seen later by Trevor and Karen Herriot, John Nelson, Frank Brazier, Carol Bjorklund, Martin Bailey, Bob Kreba, Tom Riffel, Lori Skulski and Fred Lahrman. The weather conditions at the initial sighting were clear, ~12°C, weak wind from the northwest. The bird was last seen at dusk on 12 May to the best of my knowledge.

The Garganey (*Anas querquedula*) is an Old World teal that was first recorded for the North American interior at Two Hills, Alberta, 22-24 June 1961.[2] Another record occurs for Strathmore, Alberta, 12-15 June 1982.[2] Manitoba has a 23 May 1971 record for St. Ambroise.[2] With regards to the status of the Garganey in Canada, Godfrey in *The birds of Canada* states:"Although we cannot be completely sure that some of these were not escapees from captivity, the species is widely distributed in Eurasia and is known to wander."[1]

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[1] GODFREY, W.E. 1986. The birds of Canada. National Mus. of Canada, Ottawa. 595 pp.

[2] SPEAR, L.B., M.J. LEWIS, M.P. MYRES and R.L. PYLE. 1988. The recent occurrence of Garganey in North America and the Hawaiian Islands. *Am. Birds* (42(3): 385-392.

EDITORS NOTE:

Unprecedented numbers (12) of Garganey were reported in North America during the 1990 spring migration (*American Birds* 44(3):regional reports). There were singles in California, Idaho, Alberta, North Dakota, Saskatchewan, New Brunswick, Prince Edward Island and Virginia and two in each of Quebec and Colorado; most, if not all, were males except for the pair in Colorado. Where all these birds came from is anyone's guess. They normally winter in Africa and are one of the most common winter ducks in Gambia and Senegal; they breed in Europe and Asia. Was a flock of southbound Garganey blown across the Atlantic Ocean, spent the winter intermingling with Blue-winged Teal in South America and moved northward with these in the spring? A good hypothesis, but hard to prove! — *W. Harris*

SCISSOR-TAILED FLYCATCHER AT EASTEND, SASKATCHEWAN

P.M. HOLMES, 1020 12th Street S.E., Salmon Arm, British Columbia. V1E 2C8

At 9:15 a.m. on 13 July 1990 I was travelling east on the Correction line east of Eastend, Saskatchewan and at a point 6 km e of the junction where the correction line intersects #13 Highway, I observed a male Scissor-tailed Flycatcher perched on a barbed wire fence, about 25 feet across the ditch from where I was. I stopped immediately and was able to view him for several minutes with my binoculars. He flew westerly for about 40 feet and again landed on the fence. I backed up until I was opposite him and had another good look. This procedure continued five times until he went to a fence line going south and again I followed him four times, each time being able to study him in detail from about 25 eet away. After spending about half an hour with him (I had to meet a deadline) had to leave.

There is absolutely no question as to the identity of this bird. Its long tail, looking like something dragging behind caught my eye, with its hoops of color at the end. It flew down the fence after the fashion of a kingbird, and in general had flycatcher-like behavior. It was longer than a kingbird, and showed rough patches under the wings when in flight. The day was perfectly clear with no wind.

In an effort to establish my credibility, I should mention that I have studied birds all my life — like my father who built a home on 36-6-20-W3rd, and who was well known in ornithological circles in years gone by [See *Blue Jay* 37(1):9]. I myself collected many specimens for the Saskatchewan provincial museum in the time of Fred Bard who knew our family well.

CHRISTMAS BIRD AND MAMMAL COUNTS - ANNOUNCEMENT

Count period this year is from **Saturday, 15 December 1990** to **Wednesday, 2 anuary 1991**. Count area should be a circle 24 km (15 mi.) in diameter. Counts must e a minimum of 3 hours in duration. Count forms will be mailed to compilers who ubmitted counts in 1989. Anyone else wishing to send in a count please write for orms to:

Wayne C. Harris
Box 414
Raymore, Saskatchewan
S0A 3J0

Reports of counts should be sent to Wayne as soon as possible after they are taken. o be included in the report in the March 1991 *Blue Jay* they must reach Wayne by **2 January 1991**.

EFFECT OF TEMPERATURE ON BLUEBIRD AND SWALLOW NESTING DATES

RONALD A. BITTNER, Box 97, Abernethy, Saskatchewan. S0A 0A0

The author monitors a bluebird trail about every 5 days during the nesting season in the Abernethy area. This schedule usually allows the determination of the exact date when egg laying starts. Daily minimum and maximum temperatures are also recorded; they are measured in a ventilated enclosure and are comparable to official weather office readings.

The results presented here are based on 37 Mountain Bluebird and 60 Tree Swallow nestings over the 3-year period from 1988 to 1990. Nesting dates are compared to monthly average temperatures and then to daily readings.

Since bluebirds arrive around the beginning of April and start nesting by early May it would be expected that their nesting dates would be influenced by April, and to some extent, May temperatures. Swallows which arrive around the beginning of May and start nesting by the end of May should be influenced only by May readings.

Table 1 gives the monthly mean temperatures (average of highs and lows) for 3 months together with first egg-dates for bluebirds and swallows. It shows that bluebirds nested at about the same dates in 1988 and 1989. These years had similar temperatures for April and again in May. In 1990 they nested about a week later. April was 2° cooler and May 3° cooler than the previous 2 years. Swallows were also about a week later in 1990 due to the cooler May. They were slightly earlier in 1988 than 1989 which is not explained by the May temperatures; and we cannot use the hot June of 1988 as an explanation because most swallows are nesting by the beginning of June.

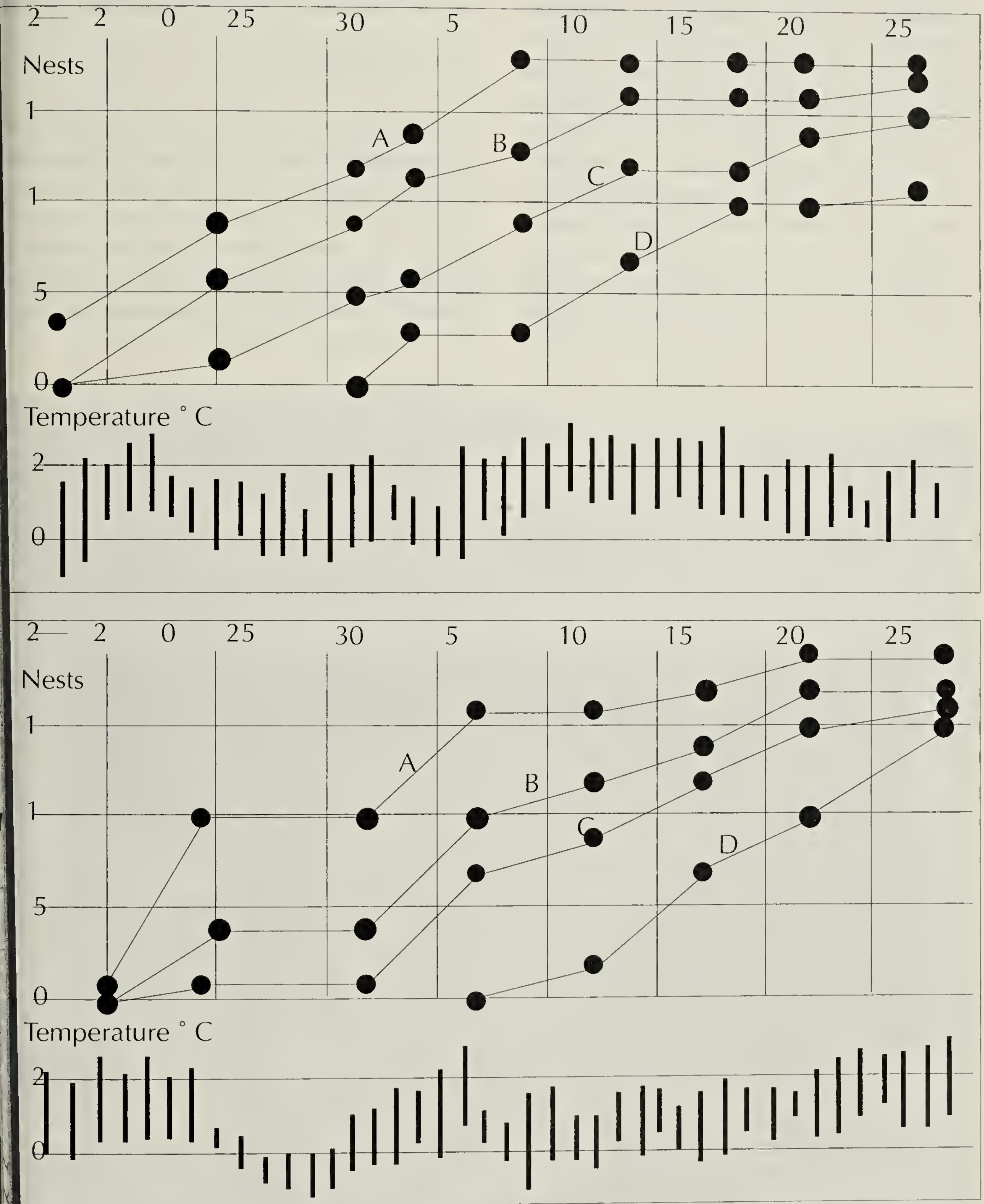
Using average monthly temperatures may be too coarse to explain all variations in nesting dates. Figure 1 shows bluebird nesting activity for 2 years

Table 1. THREE-YEAR COMPARISION OF MONTHLY TEMPERATURES AND FIRST-EGG DATES FOR MOUNTAIN BLUEBIRDS AND TREE SWALLOWS.

Year	*1988*	*1989*	*1990*
Nestboxes monitored	36	48	66
Bluebird nestings (1st brood)	9	14	14
Swallow nestings	15	22	23
Monthly mean T April	4.8	4.6	2.7
Monthly mean T May	13.5	13.3	10.4
Monthly mean T June	21.5	16.4	16.3
Bluebirds earliest 1st egg	1 May	3 May	9 May
Bluebirds median 1st egg	13 May	12 May	20 May
Swallows earliest 1st egg	23 May	27 June	31 May
Swallows median 1st egg	27 May	1 June	8 June

together with daily temperatures. The upper part of each graph shows the number of nestboxes with nests in various stages of completion. The lower part shows the daily high and low temperatures. In 1989 temperatures were fairly uniform and mostly above normal. This led to a steady progression in nesting activity. In 1990 late April was cold, preceded and followed by warm spells. Nesting activity was rapid during the warm weather and ceased during the cold weather.

Late April was also wet with 1 inch of precipitation during the cold period. The effect of precipitation on nesting dates is beyond the scope of this paper.



gure 1. *Mountain Bluebird nesting dates with daily minimum and maximum emperature. A - nests started B - nests half finished C - nests finished D - with eggs*

SNOWSHOE HARE LACTATING IN MID-OCTOBER

W.H. KOONZ, Manitoba Department of Natural Resources, Box 14, 1495 St. Jame
Street, Winnipeg, Manitoba. R3H 0W9

On 14 October 1989 Vittorio Pasquarelli and I bagged a Snowshoe Hare just west of Narcisse, Manitoba (50°42′N, 97°33′W). Hare populations crashed there in spring 1981 and were just beginning to recover.Upon observation, the hare was found to have recently been suckled. A necropsy revealed that its mammary glands were active. A lactating snowshoe Hare in mid-October was a surprise to me. In handling over 300 hares during late September 1971-1989 on Long Point,some 250 km to the north, I never noticed this condition.

Young Snowshoe Hares typically are weaned at 2 to 3 weeks,however,the last brood may suckle up to 6 weeks (L.B. Keith, pers comm.). Criddle recorded Snowshoe Hare embryos in September of 1927 and 1934, while Keith *et al.* listed mid-August conception dates.[1,2] Keith ha an update paper which includes Augus conception dates for Alberta and Newfoundland (in press).

Snowshoe Hares have a 34-37 day gestation period. During the breeding seaso they typically conceive the same day the give birth. The first spring breeding occur near the end of March. In order for female hare to be lactating in mid-October she would likely have gone throug five breeding cycles that season.

[1] CRIDDLE, STUART. 1938. A study c the Snowshoe Rabbit. *Can. Field-Na* 11(3):31-40.

[2] KEITH, L.B., O.J. RONGSTAD and E.C MESLOW. 1966. Regional difference in reproductive traits of the Snowsho Hare. *Can. J. Zool.* 44:953-961.

Snowshoe Hare *Wayne Lynch*

WOODCHUCK NEAR STEWART VALLEY

On 20 May 1990, Alan Drummond, a farmer 3 mi. east of Stewart Valley (section 15-T19-R14-W3) saw what he thought was a badger, beside one of his granaries, and, having chickens nearby, destroyed it.

On looking closer he realized it was a woodchuck, measuring 2′2″ long and weighing 8 pounds. A grizzled grey top and sides with a rich brown underside.

I am wondering how common these animals are on the prairies. — *Sig ordheim,* Box 59, White Bear, Saskatchewan. S0L 3L0

WOODCHUCK SIGHTINGS IN SOUTHEASTERN SASKATCHEWAN

The Woodchuck at Gardiner Dam on 19 December 1988 [*Blue Jay* 47(1):56] was noted to be unusually far south. I am sending a list of the Woodchucks I have seen with land descriptions of where they were sighted. We do not see these animals every year but they do show up occasionally. The first one I saw was in the 1960s in our neighbor's barn (in a manger). I am surprised that they have not been sighted this far south.

4 June 1979, summer 1980 and 19 June 1986 - in and near our yard on nw34-1-30-W1; 7 May 1981 - near the South Antler River on sw 16-1-30-W1; 13 May

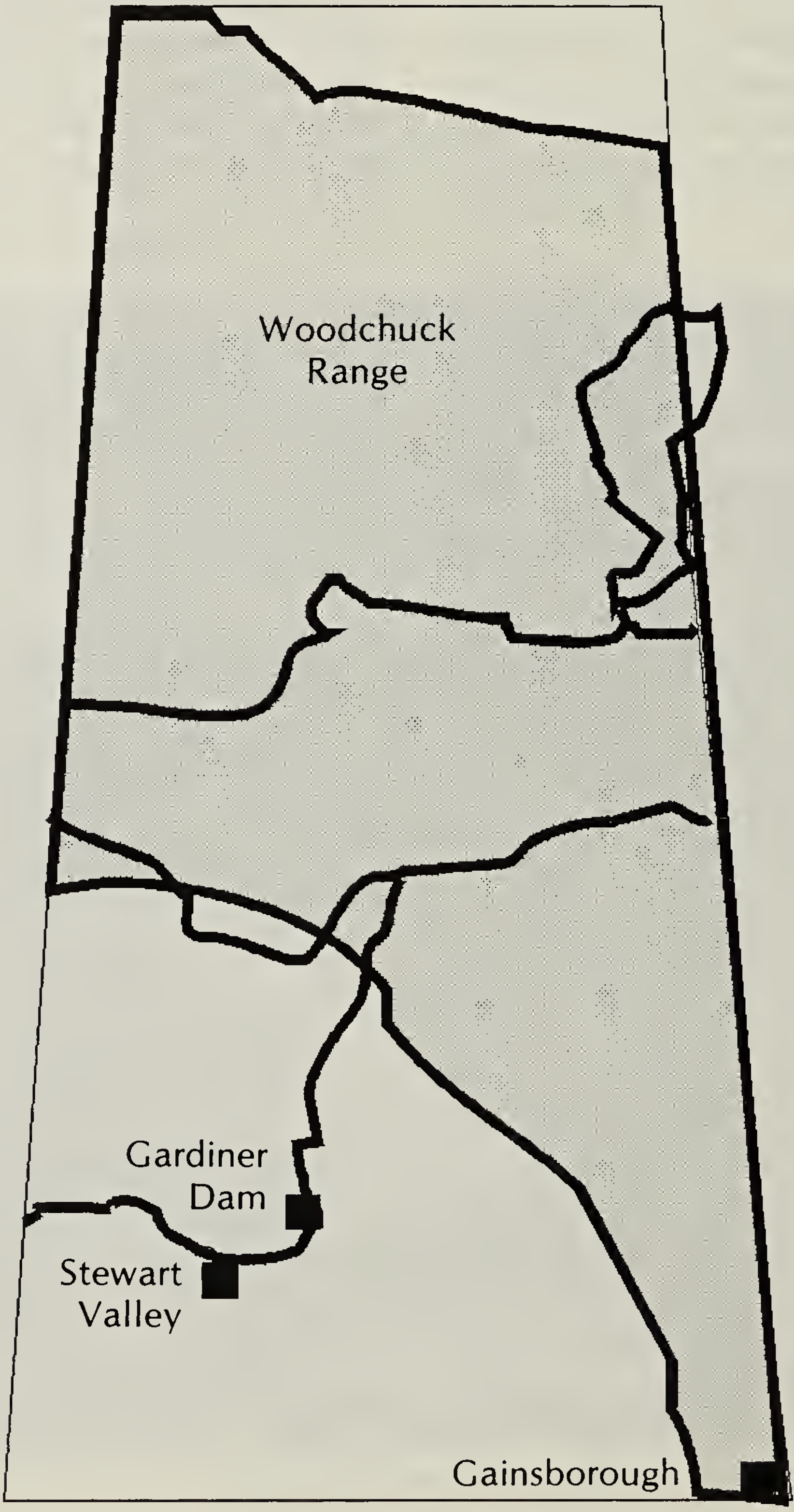
ung Woodchuck at Duck Mountain Provincial Park *B. de Vries*

1982 - at Winlow School yard on se21-1-30-W1.— *Ronald Stevenson*, Box 386, Gainsborough, Saskatchewan. S0C 0Z0

THE WOODCHUCK IN SASKATCHEWAN

This map gives the general distribution of the Woodchuck in Saskatchewan as derived from the map in *The mammals of Canada* [Banfield, A.W.F. 1974. Univ. of Toronto Press]. The sightings reported in the two notes appearing above, and the previous *Blue Jay* article mentioned, ar denoted by black squares. There is photograph of a Woodchuck in the Blu Jay files taken by Fred Lahrman at Craven northwest of Regina.

The Woodchuck was originally an in habitant of the forest edge and glades. I eastern North America it multiplied i areas where the habitat was modified b man into fields, pastures and fence rows Is it now expanding its range into th agricultural land within the prairies?



NATURE LIBRARY

HISTORICAL ATLAS OF CANADA, VOLUME 1

HARRIS, R.C. and G. J. MATTHEWS. 987. University of Toronto Press. 198 p. 11x15 in. 69 double page colour lates; cloth, $95.

My initial reaction was to revel in this ook; it was just too beautiful to want to ead the adjacent small print. Once over y euphoria, I began to skip about and ead snippets of text and began to wonder bout life in preconquest Quebec City nd if I ever walked along a prehistoric ade route.

The majority of maps have a wealth of formation without being cluttered; a ry difficult task to achieve.

The text unfolds as curtains opening an storical stage. We first see a map of the st ice sheets 12,000 years ago. As the recedes we note in the next plate the lvent of the Fluted Point People. We ow very little about them. All that mains of their existence is scraps and ips of rocks and bones. To the owledgeable archeologist these are ces of planned human endeavour and rposeful tool making unlike that of any er beast, but man, on earth.

ver time the climate changes and the is replaced with vegetation. There is w more evidence of human activity. tivity which points to more complex hnology and the beginnings of special- d hunting and food-gathering techni- s.

This first section titled "Prehistory" is made up of 18 separate numbered coloured plates. The plates are made up of both cartographic representations, written footnotes and descriptive charts.

The next group of plates, numbers 19-32, fall in the section titled "Atlantic Realm," deal with the early European fishery off the coast of North America and the first tentative toeholds of whitemen on the adjacent land mass. Following are plates 33-44 outlining the "Inland Expansion." Here we note from one ethnocentric viewpoint, the inland incursions of the French bringing fur trading and the fear of God to the native peoples. From another perspective one may see the upset of well established trading patterns and the introduction of apocalyptic plagues upon the innocent, white disease and native population decimations. The period ends with the military defeat of both French and Indians by the British.

Plates 45-56, "The St. Lawrence Settlements" present the settlement of Quebec as the economy diversified to include both fur trading and farming. Vestiges of the images presented by these plates are still evident today when one visits Quebec City and the surrounding countryside.

Of particular interest to the Westerner is the section titled "The Northwest." It deals with that area of Canada that we today call Western Canada. Given that the mandate of the Atlas is Canada prior to 1800 this section of the text outlines the activities of the fur traders. Missing from these snapshots of Rupert's Land is a description of the settlement patterns of the Indians of this region before the advent of the fur trade. While I can sympathize with the authors' intense desire not to speculate on our past, and only deal with what is known for certain, I would have liked to have found out how the fur trade with its purposeful introduction of firearms and the chance acquisition of horses changed the balance of power between the tribes and the territories that they occupied. While this view of the Northwest may be missing, Plate 61 gives you a very succinct description of the growing competition between the Hudson's Bay and the North-West companies. One can easily visualize from this plate how over time the Northwest Company encroached on the London based company's official monopoly cutting it off from its sources of furs. Similiarly, one can note how the Hudson's Bay Company counter-attacked the Montreal based engrates and eventually grabbed back more territory than they originally claimed.

The final plates, Plates 68 and 69, "Canada in 1800," are a synopsis of white settlement and native Canadian distribution at the end of the 1700s.

Overall, the Historical Atlas is a commendable effort dealing with a number of topics and epochs in a logical and contiguous manner. And while maintaining rigorous standards of scholarship, the document never falls into the depths of hyper-academic exactitude.

This book is the first of a three volume set. I look forward to Volume Two: the 19th century, and Volume Three: the 20th century. In concert these texts will weave a fabric representing the circumstances of ordinary life in Canada. — Reviewed by *Martin Bailey*, 3634 McCallum Avenue, Regina, Saskatchewan. S4S 0S5

HOME PLACE — ESSAYS ON ECOLOGY

STAN ROWE. 1990. NeWest Publishers, Edmonton. 253 pp.; $14.95 paper.

This book is a collection of thought-provoking essays on the state of the world in which we live. I think the author summarizes the contents of this book very well when he states that "The common theme of these essays is that you and me, we people, have evolved, grown in numbers and intelligence, developed values and cultures, all within a nurturing global Ecosphere that is neither well known nor deeply appreciated." This book certainly broadens one's environmental conscience.

Most of these essays have been published elsewhere in magazines and books and one might expect such a compilation to be disjointed and incoherent. Quite the opposite is true. *Home Place* presents groups of well chosen essays under the headings of Virgin Prairie, Farewell; Facing Reality: Growing Up; Strictly Academic; Agriculture; Trade and Travel. Although this book covers a great diversity of topics, Dr. Rowe's writing style is consistently readable regardless of one's background or interests.

Although I had read some of these essays before (and most of you will have, too — such as "Beauty and the Botanist," published in the June 1982 *Blue Jay*), reading them in context of a series of related essays made them enjoyable, thought provoking and most of all, very educational. I recommend that you read this book and gain an insight into what we have done and where we are going on this earth on which our lives depend — our Home Place. — Reviewed by *Wayne C. Harris*, Box 414, Raymore, Saskatchewan. S0A 3J0

BIRDS OF THE CANADIAN ROCKIES

GEORGE W. SCOTTER, TOM J. ULRICH, and EDGAR T. JONES. 1990. Western Producer Prairie Books, Saskatoon, Saskatchewan. 170 pp., illus. colour and b/w, maps, paper $22.95.

Prairie Books has a reputation for producing good books. Alas, something has gone amiss with this volume. Perhaps because of the technical requirements of an ornithological text, the publishers were unable to find an editor with the expertise needed to vet this book proper-y. That would not account, however, for he many grammatical errors. A mixture f singular and plural in the species accounts often makes the grammar wkward and confusing. There are some nisspelled words. For example, "specules" should read "spicules" in the Osprey account. More importantly, the tyle of writing itself is stilted and lacks race; sentence structure is slipshod and l-balanced.

The introduction is the highlight of *irds of the Canadian Rockies*. It is essen-al that the reader studies it carefully efore attempting to use this book. It lays ut the format, delineates the limits of the rritory covered, explains a bit of the eology of the area, sets out the terms of atus and abundance and explains the ystem used to "idiot-proof" the distribu-n code. There is useful information on rd-watching and tips on where and hen to find birds. The reader is directed the maps, which are well done, and to e glossary and diagram of bird parts, so very helpful. The book covers some 0 of the 315 bird species which occur the Canadian Rockies but a checklist the back includes all species recorded r the area, along with locations and tus. The checklist can also be used by itors to record species seen. There is a t of selected references, separate indices of common and scientific names and brief biographies of each author. Indeed, if the whole book were as well done as these sections of it, the reader would be well served.

The photographs are clear, bright and useful for identification, and some are lovely just to look at. There are a few problems, however. A Short-billed Dowitcher has been labelled Long-billed Dowitcher. The duck captioned Lesser Scaup looks suspiciously like Greater Scaup. In some cases, the addition of sex or age labels on the photos would have been helpful, since not all the pictures are of males in breeding plumage as the introduction advises us. An example of this is the photograph of the Swainson's Hawk; beginners to birding looking at an adult hawk could easily be confused by the immature plumage depicted here.

The main body of the book is comprised of species accounts, arranged following the sequence of the AOU Check-list. Photographs face the texts. Common and scientific names are given, with measurements, family relationship and distribution. Most of the plumage descriptions are of breeding adults. This is not enough; descriptions of males, females and immatures are essential for identification of most birds. What is the purpose of this book? It cannot function as a field guide without complete descriptions of plumages. If it is not to be a field guide, plumage descriptions should be omitted and emphasis placed on habitat, behaviour or some other aspect of bird study.

The reader of *Birds of the Canadian Rockies* can be confused by a series of apparently contradictory statements regarding species in certain groups of birds. For example, in the account of the Northern Harrier, where the author states that "when soaring, this harrier holds its wings decidedly elevated above the body instead of almost horizontal as other hawks do." Indeed, the harrier does do this, but so does the Swainson's Hawk. Nothing is said about the flight pattern of the Swainson's Hawk in its account. However, in the description of the Red-tailed Hawk, the Swainson's is acknowledged to have a "somewhat upward tilt" to its wings while soaring. Hawk identification is very difficult at the best of times; the ambiguities of this text make a difficult task even harder. Similar problems occur in the comparison and identification of other groups of birds treated in this volume.

This book is not a field guide. However, judiciously used in conjunction with a good field guide, it can be a pleasant companion during a birding trip to the Canadian Rockies. — Reviewed by *Carol Bjorklund,* 3634 McCallum Avenue, Regina, Saskatchewan. S4S 0S5

RETURN OF THE WHOOPING CRANE

ROBIN W. DOUGHTY. 1989. University of Texas Press, Austin. 182 pp., illus. colour, maps, cloth $xx.xx

The plight of the Whooping Crane and its rescue from near-certain extinction (only 16 birds were left in the migratory flock in 1942) has caught the attention of the world. Much has happened in the 24 years since Faith McNulty published *The Whooping Crane: The Bird that Defies Extinction*. Robin Doughty brings us up-to-date on the Whooping Crane story, with an informative and sumptuously illustrated book.

The success story is that of the wild flock that breeds in and near Wood Buffalo National Park and winters in and near Aransas Refuge in Texas. Thes cranes are carefully monitored an protected at both ends of their flight thanks to cooperation between the tw governments concerned, and to a lesse extent during their migration.

Careful, well-planned studies at Woo Buffalo determined that most pairs la and hatch two eggs, but are rarel capable of rearing two young. This jus tified collection of one egg from eac nest, every second year. Fortuitously, an somewhat contrary to genetic theory, th Wood Buffalo crane pairs produced, o average, more young when they tried t raise only one young than when they trie to raise two. The extra egg was take either to augment the captive flock a Patuxent Refuge, Maryland, or for use a Gray's Lake, Idaho, where a Whoopin Crane egg was substituted for a Sandhil Crane egg.

The team at Wood Buffalo, led by Erni Kuyt of the Canadian Wildlife Service landed at each nest by helicopter to ban most of the young and place bot aluminum and color bands above th bird's knee, not on the tibiotarsus wher bands are placed for shorter-legge species. A tiny blood sample taken at th time allowed chromosome karyotypin to determine the sex of each bird. Bande individuals are followed throughout thei lifetime to determine the age when breeding begins and which pairs are the mos successful, year after year.

The only well-meaning intervention that seemed to have harmed the youn cranes was in 1981-83, when radio transmitters were attached to the legs of 1 young, 12 of whom died, whereas four o five banded but without radios survived. The "big jump" occurred in 1984 whe 15 young made the southward migration trip successfully, followed by 16, 21, 25 and 19 in the four succeeding years. In December 1988 there were a record 138 cranes in the wild flock.

The captive breeding program at tuxent, planned to allow propagation d return of cranes to augment the wild pulation, has been a disappointment. e first six eggs from Wood Buffalo were nsferred to Patuxent in 1967, with oduction of five young that year. With velopment of artificial insemination chniques, 93 Whooping Crane eggs ere laid at Patuxent; 35 were fostered at ray's Lake, augmenting the eggs from ood Buffalo, and 18 were raised for the tuxent breeding stock. At first the icks had too little exercise, grew too st, and often died of skeletal deformities a result. Seven of the cranes, mostly eeding-age females, died of equine en- phalitis in 1984. In 1988, there were ill only 46 cranes in the Patuxent cap- e population, and reproductive perfor- ance has declined. No cranes have en returned to the wild. Recently the ptive flock has been split, sending me to the International Crane Founda- n facility at Baraboo, Wisconsin.

The highly-touted experiment of foster- g eggs into nests of Sandhill Cranes was st promulgated by the late Fred Bard of e Saskatchewan Museum of Natural istory. In spite of intelligent and well- irected effort led by Rod Drewien, who ad done his thesis on the Sandhill ranes at Gray's Lake, Idaho, the Gray's ke program has been a disaster. This ogram to develop a second population Whooping Cranes began in 1975, set t 277 eggs, yet reached a high of only individuals in 1984, with a drop to 16 1988. There was a disproportionate ortality for females, many killed by edators, fences and powerlines. No eeding pair formation has occurred and eggs have been laid. The Gray's Lake periment has been given up as a failure. ture releases may be in Florida, to gin a sedentary flock.

n spite of the success of the wild flock, yond the expectations of most of us, the eding and wintering areas are both small and near capacity. A single storm or toxic spill at either site could wipe out most of the wild flock. A second population would still be good insurance.

This definitive work on the Whooping Crane contains seven excellent maps, seven informative tables, and 30 breathtakingly beautiful color photographs, some two pages wide. I wish the index were a bit better — you cannot find the earliest age of breeding from the Index. Otherwise, the University of Texas Press has spared no expense to make this the best book possible. Read it, enjoy it, and treasure it. — Reviewed by *C. Stuart Houston*, 863 University Drive, Saskatoon, Saskatchewan. S7N 0J8

WILDERNESS ALBUM SERIES, NATURE STORIES FOR CHILDREN

Sterling Publ. Co., Inc., Hyperion Press, Winnipeg, Man. 8.9 x 11.4" $. paper.

The following books in this series were reviewed by children between the ages of 9 and 13.

DINOSAURS

G.E. LAMMERS.

I like this book because of how the story is laid out and on the bottom of the page how it tells about a dinosaur or dinosaurs. Almost all of the titles are good, but ornamentation; how could a child know what that meant?

The pictures are also very good. They look like real dinosaurs and they have a nice background. You can also color them if you wish. I really like the cover: it is drawn nicely and has nice colors on it.

The book could have shown how to pronounce the names of the dinosaurs.

I like how it was in Canada instead of some far off place. I also like how it was about Drumheller and the Tyrell Museum. When we were coming home from Edmonton we stopped at Drumheller to see the museum.

I like the book and I would buy it. — Reviewed by *Suzanne Zimmer.*

REPTILES AND AMPHIBIANS

R.E. WRIGLEY.

I thought the book *Reptiles and Amphibians* was very interesting. From the information I found out many things I didn't know. I thought the drawings were very well done. They are more than just a picture of the reptile or amphibian, they show what type of a place they live in and sometimes what kind of food they eat.

My favorite type of amphibian is the Tiger Salamander. I found out that the Tiger Salamander is related to the Mole Salamander because they spend a lot of time underground, and that the Tiger Salamander is almost never seen.

My favorite kind of reptile from the book is the Painted Turtle. I learned that the Painted Turtle hibernates from October until March, and it eats frogs and worms.

I also like the part about the Coral Snake. Now if I ever see one I will know that it is poisonous by remembering the poem from the book:

Red on yellow,
kill a fellow;
red on black,
venom lack. — Reviewed by *Anemone L. Harris,* Box 414, Raymore, Saskatchewan. S0A 3J0

WILD EDIBLES

Compiled by Mary E. Hamilton. Art by Teddy Cameron Long.

This is a coloring book. It has interesting pictures and stories. It is very useful and handy. It gives me interesting information on edible plants. The pictures are drawn very well and the stories are very well written. It is very helpful with edible plants. Some names are Bog Cranberry, Wild Mint, Giant Puffball, Sunflower, Box Elder, Dandelion and more. The stories tell what parts of the plants you can eat. There is even a recipe for Uncooked Strawberry Jam made from wild strawberries. If there are plants that look alike which are poisonous there are pictures of them, too.

The list of contents tells you what pages the plants are on. That makes it easy to find them to check on the information. Besides the stories there is a section on how big they are, what color they are and where to find them. They tell you what color they are for the pictures in the coloring book. There is lots of information but some of the words are too hard. They do not show the flowers for all of the plants. I would like to know what they look like.

The cover has different plants on it and is very colorful, too. This is a good size for a coloring book, but the cover doesn't stay together very well. I have used the book lots. There are different books in the Wilderness Album Series. I would buy them if I could. — Reviewed by *Valeriana L. Harris,* Box 414, Raymore, Saskatchewan. S0A 3J0

SOCIETY NEWS

Conservation Award

The 1990 Conservation Award went to the Telephone Pioneers of America - Saskatchewan Chapter. It was presented at the banquet of the annual general meeting to their representatives Ron Peddle and Bob Hildred. Six years ago the society began to work with the Pioneers to use metal cages being phased out by SaskTel as bluebird nest boxes. Over time they have built approximately 4000 boxes. These boxes have been built in six locaitons across the province at Swift Current, North Battleford, Saskatoon, Prince Ablert, Regina and Yorkton. At each loca-ion members ofthe Pioneers have worked with society members or in some cases Saskatchewan Wildlife Federation members to distribute the boxes out onto ence lines across Saskatchewan. Ron Peddle, an S.N.H.S. member, has been oordinator of the project for the Pioneers. Bob Hildred represented the ndividual Pioneers who built the boxes. m Elliot noted about the bluebird trails I aw "eight Mountain Bluebirds over a period of 20 miles while returning from a ociety summer meetin Nipawin, ... 43 bluebirds, 82 Tree Swallows, 26 wrens, 5 sparrows and 14 mice on a trail of 188 oxes between Dubuc and Crooked Lake aintained by Ed and Dorothy Skene of rkton.

There were no new life members this ar and no honorary members were elected.

arry Morgotch Award

This award went to Michael Williams Saskatoon for a fine series of otographs of Labrador scenery.

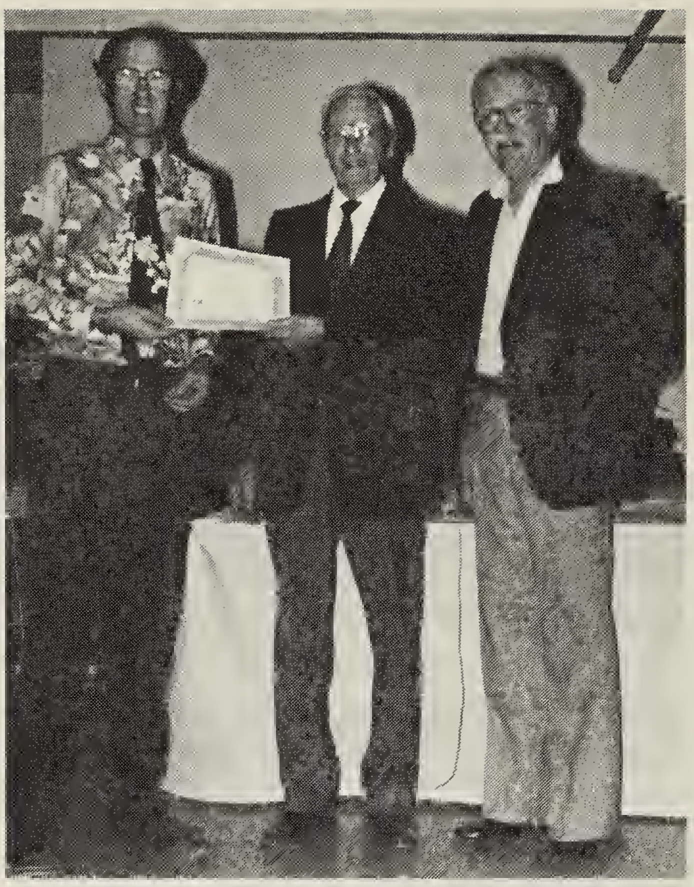
Cliff Shaw Award

The 1989 award was sent to Vernon Harms of Saskatoon. In 1989 he published "The Silky Milkweed in Saskatchewan" [47(1):2-6] and co-authored "The Yellow Immaculate Lily in Saskatchewan and adjacent Manitoba,and it persistence in native lily patches" with Doris Silcox [47(2):69-73]. Vernon has been a regular contributor of articles on the plants of Saskatchewan, with keys to help members distinguish between the plants of different groups.

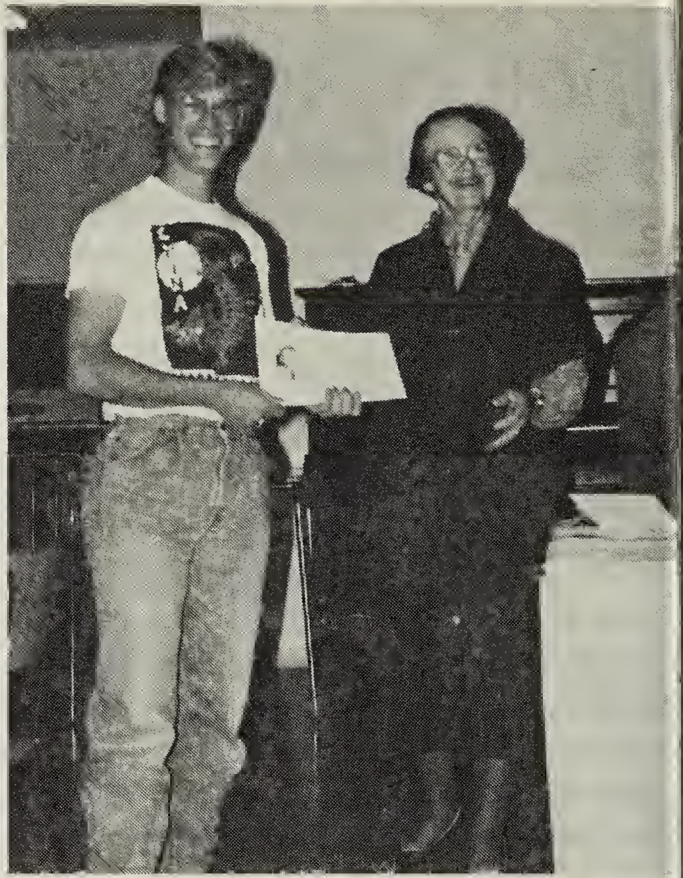
This year's award was presented to Paul Chytyk of Regina for his article on the Black-legged Kittiwake sightings at Last Mountain Lake "Saskatchewan's first Black-legged Kittiwake." [*Blue Jay* 48(2):112-114.] Paul gave a graphic description of the bird(s) seen, and his article pointed out the value of careful observation, in the fact that they had actually seen more than one bird. The two could be distinguished by plumage, but they were not recorded initially as two separate individuals because they were seen separately, and because they were a newly confirmed species for the province it is understandable that the observers were not expecting to see more than one individual on the same day.

Weyburn Birdathon

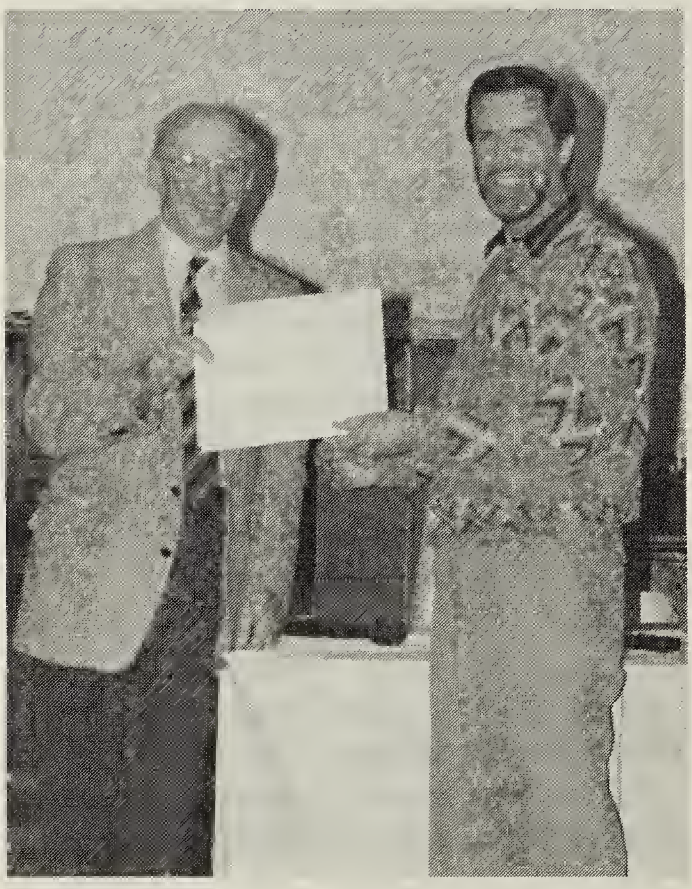
Pat Adams of the Saskatoon Natural History Society received the presentation from the Weyburn Natural History Society (represented by Leo Belanger) for taking the top place in the Birdathon held this past summer.



Conservation Award being presented to Ron Peddle and Bob Hildred by Jim Elliot Frank Switzer



Cliff Shaw Award being presented to Pau Chytyk by Margaret Belcher Frank Switze



Michael Williams receiving the Larry Morgotch Award from Jim Jowsey Frank Switzer

Pat Adams representing the Saskatoo N.H.S. as winners of the Weyburn Bir-dathon Frank Switze

SASKATCHEWAN NATURAL HISTORY SOCIETY
STATEMENT OF FINANCIAL ACTIVITIES AND FUND BALANCE FOR THE YEAR ENDED AUGUST 31, 1990

	1990 12 MONTHS	1989 11 MONTHS
REVENUE		
Grants - Sask Trust for Sport, Culture & Recreation: Annual Global Funding	$100,000	$ 88,259
Grants - Specified Programs	42,175	41,325
Grants - Other	2,550	885
Self Generated		
Advertising	580	450
Book Shop Income	1,153	2,066
Conference Registration	-	10,343
Conservation Sales	1,073	1,045
Donations	747	564
Interest	12,938	10,539
Memberships	22,223	20,821
Special Publications	1,038	1,474
Tour Income	6,801	3,070
	191,278	180,841
EXPENSES		
Personnel		
Administrative Salaries & Benefits	41,033	34,711
Office - Schedule 2	20,946	15,354
Organization Business		
Audit	600	750
Bank Charges	24	25
Memberships	220	130
Membership Communication & Public Relations		
Advertising & Promotion	2,839	6,827
Honorarium	3,245	300
Blue Jay Journal	19,049	12,009
Blue Jay News	7,189	4,072
Travel and Meeting		
Staff & Volunteer Travel	5,761	2,853
Annual & Summer Meetings	421	(229)
Board & Executive	648	114
Programs - Schedule 3	87,898	103,130
	189,873	180,046
NCREASE IN FUND BALANCE	1,405	795
UND BALANCE, BEGINNING OF YEAR	43,036	42,241
UND BALANCE, END OF YEAR	$ 44,441	$ 43,036

SASKATCHEWAN NATURAL HISTORY SOCIETY
BALANCE SHEET AS AT AUGUST 31, 1990

ASSETS

	1990	1989
CURRENT ASSETS		
Cash	$ 46,056	$ 98,192
Cash - Bookshop	3,703	1,613
Accounts Receivable	23,013	26,500
Accounts Receivable - Bookshop	1,926	5,309
Investments	83,016	83,016
Inventory - Bookshop	9,600	9,128
Prepaid Expenses	-	3,430
Prepaid Expenses - Bookshop	-	47
	167,314	227,235
TRUST ACCOUNT INVESTMENTS (Note 2)	219,102	180,891
FIXED ASSETS (Note 1)	19,995	29
	$406,411	$408,155

LIABILITIES AND MEMBERS EQUITY

	1990	1989
CURRENT LIABILITIES		
Accounts Payable	$ 19,192	$ 46,528
Accounts Payable - Bookshop	1,517	3,537
Deferred Income (Note 4)	22,065	28,399
Bequests Trust	-	15,499
	42,774	93,963
LONG-TERM LIABILITIES		
Specified Programs (Schedule 1)	80,099	90,236
Trust Accounts (Note 2)	219,102	180,891
	299,201	271,127
MEMBERS EQUITY		
Fund Balance	44,441	43,036
Equity in Fixed Assets	19,995	29
	64,436	43,065
	$406,411	$408,155

HANS de VOGEL, 1904 - 1989

CHRISTINE PIKE, Waseca, Saskatchewan. S0M 3A0

ans de Vogel observing wildlife in farmland *Hayo Heeroma*

Hans de Vogel was born in Semarang n what was then the island of Java, now nown as Indonesia, in the Dutch East ndies, son of the chief surgeon for the ntire region. Hans grew up in a fascinat- g world of jungle flora and fauna, and f people.

It was his father's wish that Hans be- ome a doctor but when de Vogel Sr. sited Holland where Hans had been nt to high school, he was startled to find s son working on a farm during holidays nd not applying himself to his studies. e decided to let his son attend a voca- onal agriculture school. Hans enjoyed especially since horses were then used farms.

Arriving in Canada in 1927, Hans orked for dairy farmers in Ontario. He me west in 1929 and found land of his vn, for sale at one dollar an acre for tax arrears. It was untouched land between Lashburn and Neilburg, Saskatchewan, south of the Battle River, and had a variety of wildlife on it. With a friend he lived in a shack, living frugally indeed, trapping to help earn a living. When he acquired cattle he shipped cream. He always remembered the help he received from neighbours.

In 1941, during the war, Hans sold his cattle and horses and joined the Dutch army. He sent all his army pay to a Canadian bank and when he was discharged he bought more land. He never said much about his war experiences or the treatment of his relatives captured by the Japanese who over-ran Java/Indonesia. However, some family members were later able to come to Canada to visit Hans, among these his niece Kitty. She made a delightful journal, illustrated with water-colour scenes, of the life with

Uncle Hans. Those were the days of real farming — lots of neighbours, plenty of visiting.

During his farming years Hans was constantly observing wildlife, becoming an "amateur expert." He joined the Wildlife Federation and the Saskatchewan Natural History Society (S.N.H.S.) in the 1960s.

In 1962 Hans' nephew, Hayo Heeroma, came from Holland and gradually began to manage the farm. This eventually gave Hans more free time and he became an appreciated attender of S.N.H.S. general meetings where his ready wit and pointed remarks often helped promote lively discussions. In 1976 he became a Representative-at-large for the Society.

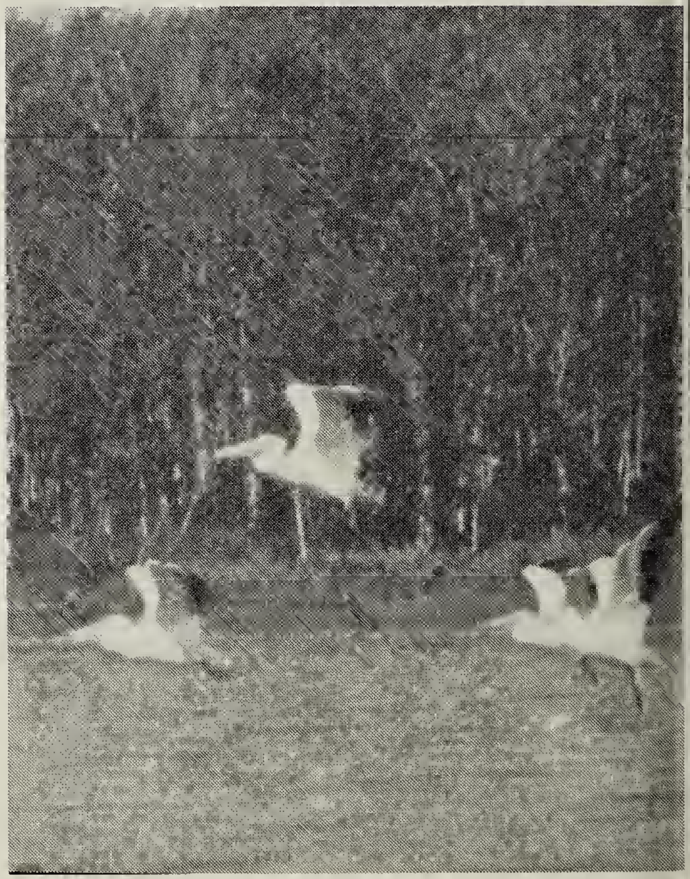
Hans joined in the 13½ year struggle to make the unique area around the mouth of the Big Gully Creek, where it runs into the North Saskatchewan River north of Paynton, into a protected area. He gave a large amount towards the rent each year and paid for a sign which was erected at the west gate. He often had his canoe (out of which he had a lot of pleasure particularly on Big Manitou Lake south of Neilburg) on the river, and spent a summer camped there at the "Mouth of the Gully." After that he wrote an article for the *Blue Jay* [December 1979; 37(4):225] on the Pileated Woodpeckers which nest along the river. Some of his beautiful slides became part of the fine photographic collection of the area, a collection which helped influence the ratepayers of the R.M. of Paynton to sell the land for a sanctuary in 1984.

Hans also helped start a bluebird trail in the Marsden-Neilburg area and was happy to assist anyone studying wildlife, for instance in the recording of nesting sites of the more rare birds.

Hans had worked hard on his farm and on selling it to his nephew in 1978, began to travel extensively, always with the intent of seeing wildlife. Hans was no merely an observer. Since his basic education had been sound and because he was well read, he could write good letters to newspapers, and clear articles His belief was that wild creatures should have space and should generally be left undisturbed. Hayo and his wife Marianne maintain wildlife habitat on the farm Hans knew for so long.

Unassuming, but outspoken and forthright, easily moving in all strata of society, Hans de Vogel had his own standards and special personality.

His headstone has etched upon it ducks in flight. The name "de Vogel" means "the bird" and all his life Hans showed his concern for them, for all creatures and the habitat in which they exist. He was posthumously made a Fellow of the Saskatchewan Natural History Society, his death occurring just 4 days before he was to receive that honour.



Pelicans at Manitou Lake *H. Heeroma*

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I am sure that many of the members of the society are not aware that their board of directors has not been running as smoothly as it might have been. That spirit of cooperation that is so important to the attainment of our goals appears to be lacking. There is "in-fighting" among the board members. Within the last few years a Newsletter Editor, Bookshop Managers and most recently the Editor of the *Blue Jay* (all appointed positions) have been summarily dismissed, in a fashion which, whether deliberate or not, has created bad feelings between members. I cannot speak to the other positions, but the dismissal of your editor has been due to the late production of issues of Blue Jay. This lateness was first caused by technical difficulties in setting up the journal on computer, and latterly by the lateness in arrival of material traditionally run in the March issue. In spite of the fact that the final two issues of 1990 were brought back on schedule the executive committee of the board chose to follow a board motion to select a new editor, if the June issue did not appear by the 15 June. At the same time they allowed the nominating committee to request the previous editor to let her name stand for appointment. This led to the awkward position where the nominating committee and the executive committee were presenting opposing positions at the board meeting in November. And the executive committee was even reluctant to let it appear that they were responsible for the new nomination. What kind of board would allow that kind of gross mismanagement?

I am truly afraid of the direction that this society has been taking. I have spoken to some of the long-term members of the society, and they do not recall this type of situation arising at board meetings in the past. The society has a great deal more money at its disposal than it has ever had. Yes, there are some research projects that are underway, but what is the society doing that is concrete in the form of conservation? What will come of having several reports, which are not even all available at the Society office, collecting dust on shelves? We must be able to show something more for this money. Please, let your board members know your ideas. Playing politics won't save the natural areas or our wildlife. Let's get back the spirit of cooperation. I would like to thank those members of the Society who gave me their support in the past, all those who sent in photographs and manuscripts and who shared their observations of nature in other ways. May Isabel Priestly's "Blue Jay" continue to help us share our observations and studies of the natural world.

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